Project Manual

For construction contracts greater than $20,000

MULTI-PURPOSE SYNTHETIC TURF FACILITY
(General Construction)
SU-092823

Dated November 30, 2023

Proposal Due Date
January 31, 2024

State University of New York Purchase College
735 Anderson Hill Road
Purchase, New York 10577-1402
Sheli Taylor, Associate Director

Project Number: SU-092823 Date: 11/30/2023
Project Name: MULTI-PURPOSE SYNTHETIC TURF FACILITY (General Construction)
Agency/Div Code: SUNY Purchase College 28260 Contract No. D990227

Bidding Documents

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SPECIFICATIONS:

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DIVISION 02 – EXISTING CONDITIONS
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03 30 00 – Cast-in-Place Concrete Work

DIVISION 05 – METALS
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31 00 00 – Earthwork
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State University of New York Construction Agreement

Summary

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General Provisions

Article II
Contract Administration and Conduct

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Article V
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Attachments – Terms, Conditions

1. Schedule I, II, III (Schedule I Unit Prices, Schedule II Allowances, Schedule III Field Order Allowances)
2. Exhibit A Standard Contract Clauses
3. Exhibit A-1 Affirmative Action Clauses

Attachments –Contractor Documentation

4. Form 7554-07 – Contractor Proposal
5. Form 7554-10 - Bid Bond and Acknowledgement *(required with bid)*
6. 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.

7. 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)

8. 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
c. Form C - Disclosure and Certification with respect to State Finance Law §§139-j and 139-k

9. Bidder's Certifications (State Finance Law §139-l, Non-collusive bidding, Executive Order 177) *from SUNY Procedure Item #7554 "Construction Contracting Procedures*
   a. Form 7554-20 Bidder's Certifications

10. Procurement Forms *from SUNY Procedure Item #7553 "Purchasing and Contracting (Procurement)*
    a. Form I Omnibus Procurement Act of 1992 *(applies >$1,000,000)*
    b. Form II Omnibus Procurement Act of 1992, Out of state firms *(applies >$1,000,000)*
    c. Form XIII Public Officers Law Compliance

11. 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)*

12. Vendor Responsibility
    a. OSC's VendRep - Online System or Link to paper forms *(form applies ≥ $100,000)*

13. 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 and Newspaper Advertisement

The State University of New York at Purchase College will receive sealed bids for project number SU-092823 Multi-Purpose Synthetic Turf Facility- General Construction until 3 p.m. local time on January 31, 2024, at the Procurement and Accounts Payable Office, Campus Center South, Purchase College, 735 Anderson Hill Road, Purchase New York 10577-1402 where such proposals will be publicly opened and read aloud. Proposals may be hand delivered or mailed to the above location and must be received by such time.

All work on this Contract is to be completed within 270 calendar days after the date of the Notice to Proceed.

A non-mandatory pre-bid conference and site walk-through for prospective Bidders will be held at 10 a.m. on Wednesday, December 13, 2023, at Capital Facilities Office Conference Room, Purchase College, 735 Anderson Hill Road, Purchase New York 10577-1402. This will be the only guided walk-through of the subject project facilities.

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. 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 December 6, 2023, through January 10, 2024, C.O.B. 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. 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 January 24, 2024.

Bids must be submitted in duplicate in accordance with the instructions contained in the Information for Bidders. Security will be required for each bid in an amount not less than five (5) percent of the Total Bid.

It is the policy of the State of New York and the State University of New York to encourage minority business enterprise participation in this project by contractors, subcontractors and suppliers, and all bidders are expected to cooperate in implementing this policy.

The Prevailing Rate Case (PRC) Number assigned to this project is PRC# 2023013524 - Turf Facility - Construction. 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://apps.labor.ny.gov/wpp/publicViewProject.do?method=showIt&id=1559327

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.

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

Designated Contacts:

Sayim Malik
Project Manager, Capital Facilities Planning
Purchase College
State University of New York
735 Anderson Hill Road
Purchase, NY 10577-1402
Tel: (914) 251-4479
Email: sayim.malik@purchase.edu

Sheli Taylor
Associate Director of Procurement & Accounts Payable
Purchase College
State University of New York
735 Anderson Hill Road
Purchase, NY 10577-1402
Tel: (914) 251-6089
Email: sheli.taylor@purchase.edu

Elizabeth Pleva
Director of Procurement & Accounts Payable
Purchase College
State University of New York
735 Anderson Hill Road
Purchase, NY 10577-1402
Tel: (914) 251-6070
Email: elizabeth.pleva@purchase.edu

Lula Curanovic
Procurement Specialist/MWBE Coordinator
Purchase College
State University of New York
Campus Center South 3rd Floor
735 Anderson Hill Road
Purchase, NY 10577-1402
Tel: (914) 251-6071
Email: lula.curanovic@purchase.edu

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.

Sealed Proposals are to be delivered to:

Sheli Taylor, Associate Director
SUNY, Purchase College
735 Anderson Hill Road
Purchase, NY 10577-1402
Tel: (914) 251-6089
Email: sheli.taylor@purchase.edu

(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 furnishing and installing a new synthetic multipurpose turf field, new bleachers, new press box and all associated work.

b. For size, the bidder should provide evidence that they have performed similar work at dollar amounts approximately equal (or greater) to the amount of bidder's bid.

c. 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. 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 Staffing Plan (Form 7557-108) 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** 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 25.28**%** for MWBE participation,10.28**%** for Minority-Owned Business Enterprises ("MBE") participation and 15**%** 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/sunypp/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 non-mandatory pre-bid conference and project walk-through will be held on December 13th, 2023, at 10 a.m. with all contractors assembled at Capital Facilities planning Building conference room at Purchase College, 735 Anderson Hill Road, Purchase, NY 10577-1402. 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 a 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 a 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-l

(1) Pursuant to N.Y. State Finance Law §139-l, 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/combating-sexual-harassment-workplace/employers.

(3) Pursuant to N.Y. State Finance Law §139-l, 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 for 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-092823 Dated: November 30, 2023
Project Name: Multi-Purpose Synthetic Turf Facility (General Construction)

TO THE STATE UNIVERSITY OF NEW YORK:

1. The Work Proposed Herein Will Be Completed Within the timeframe stated on page one of the Agreement. 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

Contract Amount	***Liquidated Damages***
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 II 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
Field Allowance	Seventy-five thousand dollars	$75,000

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

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

_____ _____

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 SU-092823**, titled **Multi-Purpose Synthetic Turf Facility (General Construction)** 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:

- Preparation of existing grass athletic field for new synthetic turf multi-Purpose facility.
- Furnish and install press box and elevated bleacher seating.
- Furnish and install prefabricated dugouts, benches, and storage items.
- Furnish and Install bullpen / batting tunnels.
- Coordinate scoreboard installation with electrical contractor.

A Full-time construction supervisor is required for this project with at least 10 years of experience in similar projects. Working foremen are not considered to be construction supervisors.

2. Work Not Included:

The Contract work does not include items marked "N.I.C"; movable furnishings, except those specified as include on the Drawings; and items marked "by others" as indicated on the Drawings.

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.

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.

https://www.purchase.edu/offices/registrar/academic-calendar/

d. The work site will be available to begin construction immediately upon Notice to Proceed. Unless otherwise indicated, normal working hours on the campus are between 7:30 a.m. and 4:00 p.m. 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 7:30 a.m. and prior to 4:00 p.m. 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 workday 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 supplemental 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 be permitted to use existing toilet and janitor closet facilities as designated by the College provided the existing facilities are not misused, defaced, or left in an unsanitary condition. If the University deems that the existing facilities have been subject to misuse or left unsanitary, the Contractor shall be informed and caused to install and maintain (at its own cost) temporary, sanitary facilities at approved locations. The Contractor shall also be held responsible for the cost of cleaning and repair of any damage to said existing facilities and adherence to health and sanitary codes of the State of New York.

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:

Not applicable.

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# 2023013524 at on
https://apps.labor.ny.gov/wpp/publicViewProject.do?method=showIt&id=1559327

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 the 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 on campus.

D. The contractor, employees and subcontractors 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.

F. Each employee of the general contractor and any of their subcontractors must wear clearly visible identification tags while on Campus. Identification tags must at a minimum state what company the employee works for, name of employee, photo identification, and company contact information (including phone number).

G. **Each employee of the general contractor and any of their subcontractors must adhere to the State and Campus' Covid-19 safety rules and guidance requirements to maintain a safe workplace. The general contractor must request all required forms from the campus' health and safety officer for their firm and any of their sub-contractor firms who will be on-site during the project period. Forms must be signed and submitted prior to any workers arriving on campus.**

1.3 Use of Permanent Utilities

A. As the building is still an existing building and will be occupied, 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.
6). Contractors shall not store flammable materials on any roofs.

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. If electrical power is not available in the area of work, it is the Contractor's responsibility to provide the 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. If electrical lighting is not available in the area of work, it is the Contractor's responsibility to provide the 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 **not** use the existing toilet, water, and drinking water facilities. It is the Contractor's responsibility to provide their own temporary toilet facilities 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 a $35.00 fee for parking permits. The fee is per vehicle and permits need to be displayed 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. Pre-task planning is essential to ensure safe execution of work. The importance of obtaining all required reviews, approvals, permits and authorizations and selecting appropriate controls as soon as the scope of work is defined, cannot be overstressed. Neglecting to obtain these items "Well in Advance" of project mobilization can result in costly delays.

B. 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).

C. The Contractor shall adequately address the work scope, potential hazards and controls to be implemented to prevent accidents, by submitting either a project specific health and safety plan or a detailed Job Hazard Analysis (JHA).

D. Contractors shall refer to the "Purchase College Environmental, Health & Safety Contractor Guidelines" brochure which provides an overview of requirements for working safely. In the event specific details regarding working safely are needed, the contractor shall consult with the Purchase College project manager responsible for the work who will engage the EH&S department as needed.

E. Contractors shall exercise Stop Work Authority anytime conditions change that introduce new hazards. The hazards shall be reevaluated, and additional controls shall be put in place.

F. 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, debris, and noise. 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. Any barriers required for the project shall be erected in a manner that does not block or restrict air flow around smoke detectors.

G. Accidents – Personal/Property Damage:

The safety of any employee, agent, consultants, student, staff member or guest of the College or the contractor is a primary obligation of the contractor. The contractor is responsible for ensuring that any construction, renovation, maintenance or other work is managed in a safe and effective manner.

If an accident occurs that results in personal injury or property damage, the contractor shall immediately contact: For situations where people or property are at immediate risk, first:

Purchase College University Police at (914) 251-6900, which will determine if 911 should be called; and then

Capital Facilities Planning at (914) 251-5916 or sean.connolly@purchase.edu
Health & Safety Officer at (914) 251-6022 or louis.wirtz@purchase.edu

H. Fire safety during construction:

1). The Contractor shall provide all temporary equipment, labor and materials required for compliance with the applicable provisions of Chapter 33, 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 33 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 3308 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 3308.3, the training of the Contractor's workforce per 33308.4, maintenance of the fire protection equipment per 3308.5, supervising hot work operations per 3308.6, and implementing temporary impairment to existing fire protection systems per 73308.7 & 3309.8. This superintendent shall also provide periodic written reports at the field meetings and respond to questions raised concerning compliance with Chapter 33 of the Fire Code of New York State.

3). Any tar kettle in use must have a functioning thermometer to check the temperature of the tar. Tar kettle temperature shall never exceed 550 degrees F according to ASTM D312. At a minimum. a 5 lb. ABC fire extinguisher shall be available near, but not next to, the tar kettle.

I. 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.

J. 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.

K. 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 35 of the FCNYS and/or involves demolition activities that are hazardous in nature as defined in Chapter 33 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 3304.5 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 One Commerce Plaza 99 Washington Avenue – Suite 500, Albany, NY 12210-2833, Phone: (518) 474-6746, Fax: (518) 474-3240, e-mail: fire@dhses.ny.gov 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 calling (914-251-6911), with the exact location 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) Have a suitable fire extinguisher, or extinguishers, in the area for use if needed.
g) Maintain a written log of fire watch activities.
h) 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).
i) 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) Location at/in 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.

L. Protection of Trees:

Fencing will be used to protect trees in construction areas. No activity, traffic, or storage of materials under the "drip line" of trees will be allowed without approval of Facilities Services. Specific tree protection guidelines are available for those projects which may encroach on trees.

1.11 Building Access

A. Access to buildings and rooms is an important security matter. Improper use of keys, combinations or other means of access to both common and private areas on campus can result in a risk of harm to the safety and security of students and staff. As a result, contractors and their employees must strictly safeguard keys and adhere to any requirements related to building access.

B. Keys will be issued only at the Facilities Services office Monday through Friday from 7:30 a.m. to 5 p.m. Identification will be required and left in Facilities office for the duration that key is issued. Contractor must provide necessary information in the Access Logbook located within the Facilities office.

C. Keys must be returned to Facilities Service office at the end of each workday and picked up each morning; unless long-term check out is approved by a Facilities Services Project Manager. If work is starting earlier, or ending later, or on weekends or holidays, this transaction may be completed at the University Police Office, located in the Lincoln Avenue Underpass, which is staffed 24 hours per day. This must be arranged ahead of time with the project manager.

D. Keys issued to the contractor are the responsibility of the contractor. The cost of replacing locking hardware due to key loss will be charged to the contractor. Contractors are advised that the cost of changing multiple locks accessible off of one key can be significant.

E. The keys should never be loaned to another individual, as they are the responsibility of the person who signed them. A record of the chain of custody for each key provided to the contractor must be maintained.

F. Exterior doors and interior fire doors must not be propped open.

G. Student room doors in all residence halls should remain locked at all times when the university is not in session or students are in residence. Workers who need access will be issued a key to access the room. Each contractor who accesses a room to do work should ensure that the door is locked each time he/she leaves the room.

H. No existing building security or fire detection system shall be disturbed, altered, disarmed, rendered inoperable, or relocated without the express written consent of the University.

1.12 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 subcontractors, 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 workday 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 workday, 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.

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. Work scope and work location will be considered when determining the length of time a Hot Work Permit will remain in effect. Significant changes in the work scope or work location will require review of the project and issuance of a new permit.

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

4). There shall be no concrete cleanout performed on Campus.

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

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.

SPECIFICATION SECTIONS

DIVISION 01 – GENERAL REQUIREMENTS
Section Number and Title
01 56 39 – Temporary Tree and Plant Protection

DIVISION 02 – EXISTING CONDITIONS
Section Number and Title
02 41 19 – Selective Site Demolition

DIVISION 03 – CONCRETE
Section Number and Title
03 30 00 – Cast-in-Place Concrete

DIVISION 05 – METALS
Section Number and Title
05 12 00 – Structural Steel Framing

DIVISION 07 – THERMAL AND MOISTURE PROTECTION
Section Number and Title
07 92 00 – Joint Sealants

DIVISION 09 – FINISHES
Section Number and Title
09 90 00 – Painting

DIVISION 10 – SPECIALTIES
Section Number and Title
10 75 16 – Ground Set Flagpoles

DIVISION 11 – EQUIPMENT
Section Number and Title
11 68 33 – Athletic Field Equipment
11 68 33.33 – Enclosed Dugout
11 68 43 – Exterior Scoreboards

DIVISION 13 – SPECIAL CONSTRUCTION
Section Number and Title
13 34 16.53 – Bleachers (Permanent)
13 34 23.11 – Prefabricated Press Box

DIVISION 31 – EARTHWORK
Section Number and Title
31 00 00 – Earthwork
31 00 01 – Site Work General Provisions
31 00 02 – Stake Out
31 25 13 – Erosion and Sediment Control

DIVISION 32 – EXTERIOR IMPROVEMENTS
Section Number and Title
32 12 16 – Asphalt Paving
32 15 40 – Crushed Stone Surfacing
32 18 13 – Synthetic Grass Surfacing (Blended Fiber)
32 31 13 – Vinyl Coated Chain Link Fences and Gates
32 31 13.44 – Tension Netting Backstops
32 92 00 – Lawn and Grasses

DIVISION 33 – UTILITIES

Section Number and Title

33 40 00 – Storm Drainage Utilities
33 40 00.11 – Cleaning Existing Storm Water Drainage Systems
33 41 00 – Storm Utility Drainage

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 015639 – TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions in the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes general protection and pruning of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction, and the general protection and delineation of nearby wetlands.

B. Related Sections include the following:
   1. Division 31 Section “Site Clearing” for removing existing trees and shrubs.

1.03 DEFINITIONS

A. Caliper: Diameter of a trunk measured by the average of the smallest and largest diameters at 6 inches above the ground for trees up to, and including, 4-inch size; and 12 inches above the ground for trees larger than 4-inch size.

B. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, and indicated on Drawings.

C. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

D. Wetland Protection Limits: Area in surrounding wetlands to be protected from impacts during construction and indicated on Drawings.

1.04 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Existing Conditions: Documentation of existing trees, plantings, and wetlands indicated to remain and be protected, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.
   1. Use sufficiently detailed photographs or videotape.

1.05 PROJECT CONDITIONS

A. The following practices are prohibited within protection zones:
   1. Storage of construction materials, debris, or excavated material.
   2. Parking vehicles or equipment.
   3. Erection of sheds or structures.
   4. Impoundment of water.
   5. Excavation or other digging unless otherwise indicated.
   6. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

7. Do not direct vehicle or equipment exhaust toward protection zones.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Topsoil
   1. Topsoil: Natural or cultivated top layer of the soil profile or manufactured topsoil; containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 1 inch in diameter; and free of weeds, roots, and toxic and other non-soil materials.

B. Organic Mulch: Free from deleterious materials and suitable as a top dressing for trees and shrubs, consisting of the following:
   1. Type: Ground or shredded hardwood
   2. Size Range: 3 inches maximum, ½ inch minimum
   3. Color: Natural

C. Protection-Zone Fencing: Fencing fixed in position and meeting the following requirements:
   1. Plastic Protection-Zone Fencing: Plastic construction fencing constructed of high-density extruded and stretched polyethylene fabric with 2-inch maximum opening in pattern and weighing a minimum of 0.4 lb/ft; remaining flexible from minus 60 to plus 200 deg. F; inert to most chemicals and acids; minimum tensile yield strength of 2000 psi and ultimate tensile strength of 2680 psi; secured with plastic bands or galvanized-steel or stainless-steel wire ties; and supported by tubular or T-shape galvanized-steel posts spaced not more than 8 feet apart.
      a) Height: 4 feet
      b) Color: High-visibility orange, nonfading

PART 3 - EXECUTION

3.01 EXAMINATION

A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

B. For the record, prepare written report, listing conditions detrimental to tree and plant protection.

3.02 PREPARATION

A. Locate and clearly identify wetlands, trees, shrubs, and other vegetation to remain. Tie a 1-inch blue-vinyl tape around each tree trunk at roughly 54 inches above the ground, for all perimeter trees 4-inch caliper and larger, or as ordered by the Landscape Architect or Engineer. Flag the limits of all wetlands within 20 feet of the construction limits.

B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.

3.03 WETLAND-, TREE-, AND PLANT-PROTECTION ZONES

A. Protection-Zone Fencing: Install protection-zone fencing along edges of tree- and plant-protection zones, and a minimum of 1-foot outside of wetland-protection zones before materials or equipment are brought on the site and construction operations begin in a manner that will prevent people from easily entering protected area except by entrance gates. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.

B. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Architect, Owner, and Owners Representative. Under no circumstances will disturbance of wetlands be acceptable.

C. Maintain protection-zone fencing in good condition as acceptable to the Owner's Representative and remove when construction operations are complete, and equipment has been removed from the site.
   1. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.

3.04 EXCAVATION

A. General: Excavate at edge of protection zones and for trenches indicated within protection zones according to requirements in Division 31 Section "Site Earthwork."

3.05 ROOT PRUNING

A. Prune roots that are affected by temporary and permanent construction. Prune roots as follows:
   1. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
   2. Cut Ends: Do not paint cut root ends
   3. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
   4. Cover exposed roots with burlap and water regularly.
   5. Backfill as soon as possible according to requirements in Division 31 Section "Earth Moving."
   6. Root Pruning at Edge of Protection Zone: Prune roots 12 inches outside of the protection zone, by cleanly cutting all roots to the depth of the required excavation.

3.06 CROWN PRUNING

A. Prune branches that are affected by temporary and permanent construction. Prune branches as follows:
   1. Pruning Standards: Prune trees according to ANSI A300 (Part 1).
   2. Do not apply pruning paint to wounds.

B. Chip removed branches and dispose of off-site.

3.07 REGRADING

A. Lowering Grade: Where new finish grade is indicated below existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the tree- or plant-protection zone.

B. Raising Grade: Where new finish grade is indicated above existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the tree- or plant-protection zone.

1. Minor Fill within Tree- or Plant-Protection Zone: Where existing grade is 5 inches or less below elevation of finish grade, fill with topsoil. Place topsoil in a single un-compacted layer and hand grade to required finish elevations.

3.08 REPAIR AND REPLACEMENT

A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Architect, Owner, and Owner's Representative. Under no circumstances will disturbance of wetlands be acceptable.
   1. Submit details of proposed root cutting and tree and shrub repairs.
   2. Replace vegetation that cannot be repaired and restored to full-growth status, as determined by Architect or Owner's Representative.

3.09 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove excess excavated material, displaced trees, trash and debris, and legally dispose of them off Owner's property.

END OF SECTION

DIVISION 02 – EXISTING CONDITIONS

SECTION 024119 – SELECTIVE SITE DEMOLITION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provision of Contract, including General and Supplementary Conditions and Division 01 - Specification Sections, apply to work of this Section.

1.02 SUMMARY

A. Section Includes:
   1. Demolition and removal of selected site elements.
   2. Salvage of existing items to be reused or recycled.

B. Extent of selective demolition work is indicated on drawings and/or specified herein.

1.03 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.

C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.

D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.04 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition shall remain the property of Owner.

   1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.05 PREINSTALLATION MEETINGS

A. Predemolition Conference: Conduct conference at Project site.

   1. Inspect and discuss condition of construction to be selectively demolished.
   2. Review structural load limitations of existing structure.
   3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
   4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
   5. Review areas where existing construction is to remain and requires protection.

1.06 INFORMATIONAL SUBMITTALS

A. Schedule: Submit schedule indicating proposed methods and sequence of operations for selective demolition work to Owner's Representative for review and approval prior to commencement of work.

B. Qualification Data: For refrigerant recovery technician.

C. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting the public, pedestrian access and circulation areas and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.

D. Schedule of Selective Demolition Activities: Indicate the following:
   1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
   2. Interruption of utility services. Indicate how long utility services will be interrupted.
   3. Coordination for shutoff, capping, and continuation of utility services.
   4. Use of elevator and stairs.
   5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

E. Inventory: Submit a list of items that have been removed and salvaged.

F. Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that may be damaged during demolition.

G. Warranties: Documentation indicated that existing warranties are still in effect after completion of selective demolition.

1.07 JOB CONDITIONS

A. Owner will be occupying areas of the site immediately adjacent to areas of selective demolition. Demolition work must be conducted in a manner to minimize disruption of normal Owner’s operations.

B. Exits: All exits must be kept clear and maintained.

C. Protection: Provide temporary barricades and other forms of protection as required to protect Owner's personnel, staff and General Public from injury due to selective demolition work and new construction.

   1. Prevent dust and dirt from rising and entering the building.
   2. Protect adjacent floor areas with suitable coverings.

D. Project Waste: All project waste and rubbish to be disposed in containers provided by the Contractor for subsequent legal off site disposal. Container locations to be coordinated with the Owner. Off site disposal must be on a regular basis.

E. Damage: Promptly repair or replace areas that are to remain and are damaged by demolition or removal work.

F. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

G. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

H. Storage or sale of removed items or materials on-site is not permitted.

I. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.
2. Contractor shall provide a Fire Watch or other method acceptable to the authority having jurisdiction should the existing fire protection facilities be required to be shut down during construction work.
3. Do not disable or disrupt building fire or life safety systems without (1) one week prior written notice to Architect or Construction Manager.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Examine the areas and conditions under which work of this Section will be performed for any interferences, or conditions which will be detrimental to timely and proper completion of the work.

C. Report any interferences or unsatisfactory conditions to the Architect in writing. Do not proceed until interferences or unsatisfactory conditions have been removed or corrected.

D. Review Project Record Documents of existing construction or existing conditions and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in the Project Record Documents.

E. Survey existing conditions and reference scope of work on Drawings to determine extent of selective demolition required.

F. Engage a professional engineer to perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.

1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

G. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs

and/or video.

1. Inventory and record the condition of items to be removed and salvaged. Provide photographs of conditions that might be misconstrued as damage caused by salvage operations.

3.02 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

B. Existing Services/Systems to be removed, relocated, or abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Arrange to shut off indicated utilities with utility companies. Provide 1 week notice to the Architect prior to any utility shut-downs.
2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
3. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated to be removed.

    a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap, plug or reconnect remaining piping with same or compatible piping material.
    b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
    c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
    d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect and make operational.
    e. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
    f. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.03 PROTECTION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Comply with requirements for access and protection specified in Section 015000 – Temporary Facilities and Controls.

B. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building. Maintain existing minimum required widths of egress pathways throughout.
2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations. Erect and maintain dust-proof closures to prevent the spread of dust to adjacent areas.
4. Cover and protect furniture, furnishings, and equipment that have not been removed.

5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 – Temporary Facilities and Controls

C. Temporary Shoring: Design, provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished. Provide engineered signed and sealed drawings prepared by a Professional Engineer.
   1. Strengthen or add new supports when required during progress of selective demolition.

3.04 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

   1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
   2. 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.
   3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
   4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
   5. Maintain fire watch during and for at least 2 hours after flame-cutting operations.
   6. Maintain adequate ventilation when using cutting torches.
   7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
   8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
   9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
   10. Dispose of demolished items and materials promptly.

B. Removed and Salvaged Items:
   1. Clean salvaged items.
   2. Pack or crate items after cleaning. Identify contents of containers.
   3. Store items in a secure area until delivery to Owner.
   4. Transport items to Owner's storage area designated by Owner or as indicated on Drawings.
   5. Protect items from damage during transport and storage.

C. Removed and Reinstalled Items:
   1. Clean and repair items to functional condition adequate for intended reuse.
   2. Pack or create items after cleaning and repairing. Identify content of containers.
   3. Protect items from damage during transport and storage.
   4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports and miscellaneous materials necessary to make item functional for use indicated.

D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable,

protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete

3.05 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 1 inch (25 mm) at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.

B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.

C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.

D. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings." Do not use methods requiring solvent-based adhesive strippers.

E. Roofing: Remove no more existing roofing than what can be covered in once day by new roofing and so that building interior remains watertight and weathertight. Refer to Roofing Specifications.

3.06 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
4. Each day, remove debris, rubbish, and other materials resulting from demolition operations from building in accordance with Specifications Sections 013563 and 017419. Material to be disposed in containers provided by the Contractor. *(For LEED Certified Projects)*

B. Burning: Do not burn demolished materials.

3.07 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began. Upon completion of demolition work, remove tools, equipment and all remaining demolished materials from site. Leave areas broom clean.

END OF SECTION

DIVISION 03 – CONCRETE

SECTION 033000 – CAST-IN-PLACE CONCRETE WORK

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this section.

1.02 SCOPE/SUMMARY

A. In general, the extent of concrete work is shown on the drawings. Provide all labor, materials, equipment, services, and perform all operations required to complete the installation of all work of this section and related work as indicated on the drawings and specified herein, including, but not necessarily limited to, the following:

1. Concrete footings, pile caps, grade beams, foundations, and walls.
2. Concrete steps, platforms, ramps, equipment pads.
3. Interior concrete slabs on grade or fill and elevated slabs.
4. Exterior concrete on grade: Curbs, walks, plazas, stairs, ramps and driveway aprons.
5. Expansion, control and isolation joints in concrete work.
6. Porous fill and vapor barrier for slabs on grade or fill.
7. Floor hardening treatment for interior exposed cement floors and base.
8. Grouting of bearing plates, leveling plates, miscellaneous lintels, and equipment supported on concrete.
9. All forms and reinforcing required for work of this section.
10. Cut, patch, finish, and point concrete and cement work.
11. Pre-molded filler at intersection of floor slabs and exterior wall, and where otherwise indicated (typical at all points abutting vertical surfaces).
12. Installation of water stop material where indicated when necessary.

B. Work not included: The following items of related work are specified in other sections or contracts.

1. Furnishing of hanger inserts, anchors, leveling plates, sleeves, conduits, etc.
2. Waterproofing and damp proofing.

1.03 RELATED SECTIONS

A. Section 013563 – LEED Requirements
B. Section 014523 – Tests, Inspections and Special Inspections
C. Section 014529 – Testing Laboratory Service
D. Section 017419 – Construction Waste Management
E. Section 035416 – Self Leveling Cementitious Underlayment
F. Section 042000 – Unit Masonry
G. Section 051200 – Structural Steel
H. Section 061000 – Rough Carpentry
I. Section 071000 – Damproofing
J. Section 071616 – Crystalline Waterproofing
K. Section 072000 – Building Insulation
L. Section 072600 – Vapor Retarders
M. Section 310000 – Earthwork
N. Section 310002 – Stakeout

1.04 SUBMISSIONS

A. All submissions to be made in accordance with Section 013300 - Submittal Procedures.

B. A concrete mix design: Submit laboratory test reports of concrete materials and mix design for each strength of concrete required on the project. Design data shall clearly identify the testing laboratory and provide 28 day strength testing reports representing mix proposed inclusive of all admixtures.

1. Mix design shall also include the following information;

a. Minimum design strength intended.
b. Cement content
c. Water content
d. Slag content
e. Water cement ratio
f. Maximum aggregate size
g. Coarse aggregate content
h. Fine aggregate content
i. Air entrainment by volume
j. Adjustment for aggregate moisture slump
k. Tested flexural strength
l. Tested compressive strength

2. Additional inclusions if required on job:

a. Admixtures
b. Water reducers
c. Accelerators
d. Retarders
e. Fibers
f. Colorants
g. Special purpose admixtures
h. Corrosion inhibitor
i. Viscosity modifiers

C. Product Data: Submit manufacturer's product data for all materials and items required for the proposed Scope of Work. Including, but not limited to: concrete mix components, reinforcement and forming accessories, wall sleeves, admixtures, patching compounds, waterstops, joint systems, curing compounds, dry-shake finish materials, hardener/sealers, vapor barriers, non-shrink grit, etc. Product data for materials and items not listed above will be submitted upon the request of the Architect.

D. Shop Drawings-Reinforcement: Submit complete and accurate shop drawings for approval before any work is executed. The shop drawings submitted by the Contractor shall be independently prepared for him by a Professional Engineer licensed to practice in the State of New York or otherwise within the state where the project is to be constructed and shall completely show the following:

1. Foundation plans and details, including but not limited to: pier plan details, stair sections, exterior wall elevation drawings which show all reinforcing, top of wall elevations, brick shelves & shelf elevations, tops of piers, bottom of footings, stepped footings and elevation changes, bar schedules, stirrup spacing, diagrams of bent bars, arrangement of concrete reinforcement. Include special reinforcement required for openings through concrete structures.

2. Floor slab plan indicating elevation variations, recesses, control joints, isolation joints, expansion joints and any proposed cold joints and details of each.

3. Bending and tying diagrams, including typical corners,

4. Sizes and spacing of members, relationship to contiguous work, fabrication, bending, and placement of concrete reinforcement.

5. General notes and legends as required.

6. Drawings shall comply with the latest version of ACI 315 Details and Detailing of Concrete Reinforcement.

7. Any and all other pertinent information.

8. Shop drawings must be signed and sealed by licensed professional engineer.

E. Samples: Submit samples of materials only if requested by the Architect, including names, sources, and descriptions.

F. Material Certificates: Provide material certificates in lieu of laboratory test reports when permitted by Architect. Material certificates shall be signed by the NYS-licensed Professional Engineer who prepared the shop drawing submittal, certifying that each material item complies with, or exceeds, specified requirements.

G. LEED Submittals, for LEED projects submit the following:

1. Submit recycled content and regional materials documentation for each type of product provided under work of this Section in accordance with Section 013563 - LEED Requirements.

2. Credit MR 7: If plywood forms are used, Contractor must submit documentation that the plywood used contains no urea-formaldehyde and that the plywood meets the requirements of LEED MR Credit 7, Certified Wood, by providing wood certification documentation, including chain-of-custody documentation from the manufacturer declaring conformance with the Forest Stewardship Council (FSC) guidelines for certified wood building components.

3. Manufacturer’s verification that steel reinforcement contains at least 90% combined post-consumer and post-industrial recycled content.

4. Manufacturer’s verification that VOC content of interior concrete sealer is less than 250 g/L.

1.05 GENERAL REQUIREMENTS AND QUALITY ASSURANCE

A. Codes and Standards: Comply with the provisions of the latest version of the following codes, specifications, and standards, except where more stringent requirements are shown or specified:

1. Concrete Reinforcing Steel Institute (CRSI), "Manual of Standard Practice."

2. American Society for Testing and Materials (ASTM) Latest Versions:

a. ASTM C 33 "Specification for Concrete Aggregates."
b. ASTM C 39 "Test Method for Compressive Strength of Cylindrical Concrete Specimens."
c. ASTM C 42 "Methods of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete."
d. ASTM C 94/C94 M-00 "Standard Specification for Ready-Mix Concrete."
e. ASTM C 150 "Specification for Portland Cement."
f. ASTM A 185 "Specification for Steel Welded Wire, Fabric, Plain, for Concrete Reinforcement."

g. ASTM C 260 "Specification for Air-Entraining Admixtures for Concrete."
h. ASTM C 309 "Specification for Liquid Membrane-Forming Compounds for Curing Concrete."
i. ASTM A 615 "Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement."

3. American Concrete Institute (ACI): Latest Versions

a. ACI 117 “Standard Tolerances for Concrete Construction and Materials.”
b. ACI 211 “Recommended Practice for Selecting Proportions Concrete.”
c. ACI 301 “Specifications for Structural Concrete for Buildings.”
d. ACI 302 "Guide for Concrete Floor and Slab Construction."
e. ACI 304 “Recommended Practice for Measuring, Mixing and Placing Concrete.”
f. ACI 305 "Hot Weather Concreting."
g. ACI 306 "Cold Weather Concreting."
h. ACI 315 "Details and Detailing of Concrete Reinforcement."
i. ACI 318 “Building Code Requirements for Reinforced Concrete.”
j. ACI 347 “Recommended Practice for Concrete Formwork."

B. Quality Control Testing During Construction:

1. The Owner will employ an independent testing laboratory to perform tests and to submit test reports. The contractor will be responsible for contacting the testing laboratory to arrange for all sampling, observation and testing. The Owner will pay for all passing tests; all failed tests and any additional testing required due to failed tests will be the responsibility of the contractor.

2. Sampling and testing for quality control during placement of concrete shall include the following as appropriate to scope, as directed by the Architect and in coordination with Section 014523.

3. Sampling Fresh Concrete: ASTM C 172, except modified for slump to comply with ASTM C 94.

a. Slump: ASTM C 143; one test at point of discharge per truckload or batch of each type of concrete; additional tests when concrete consistency seems to have changed. See 2.05G for slump limits.

b. Air Content: ASTM C 173, volumetric method for lightweight or normal weight concrete; ASTM C 231 pressure method for normal weight concrete; one for each days' placement of each type of air-entrained concrete.

c. Concrete Temperature: Test hourly when air temperature is 40°F (4°C) and below, and when 80°F (27°C) and above; and each time a set of compression test specimens are made.

d. Compression Test Specimen: ASTM C 31; one set of 4 standard cylinders for each compressive strength test, unless otherwise directed. Mold and store cylinders for laboratory cured test specimens except when field-cure test specimens are required.

e. Compressive Strength Tests: ASTM C 39; one set for each day's placement exceeding 5 cu. yds. plus additional sets for each 50 cu. yds. over and above the first 25 cu. yds. of each concrete class placed in any one day; one specimen tested at 7 days, two specimens tested at 28 days, and one specimen retained in reserve for later testing if required.

1) When frequency of testing will provide less than 5 strength tests for a given class of concrete, conduct testing from at least 5 randomly selected batches or from each batch if fewer than five are used.

f. When total quantity of a given class of concrete is less than 50 cubic yards, strength test may be waived by Architect if, in his judgement, adequate evidence of satisfactory strength is provided.

g. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, evaluate current operations and provide corrective procedures for protecting and curing the in-place concrete.

h. At the discretion of the Architect the strength level of concrete will be considered satisfactory if averages of sets of three consecutive strength test results equal or exceed specified compressive strength, and no individual strength test result falls below specified compressive strength by more than 500 psi.

4. Test results will be reported in writing to the Architect, Structural Engineer, and Contractor within 24 hours after tests. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions, and materials, compressive breaking strength and type of break for both 7-day tests and 28-day tests.

5. Non-destructive Testing: Impact hammer, sonoscope, or other non-destructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.

6. Additional Tests: The testing service will make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by the Architect. Testing service may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed. Contractor shall pay for such tests when unacceptable concrete is verified.

C. The Contractor shall provide a storage box to be used exclusively for the storage and curing of concrete test specimens. This box shall be substantially constructed, made of 1" thick T & G lumber, well braced to prevent warping, or 1/2" thick plywood (exterior grade) may be used. Box shall be provided with a hinged cover and padlock. Storage box shall be so constructed and located on the project site that its air temperature when containing concrete specimens will remain between 60° and 80°F. During the first 24 hours that any test specimens are in the box, electric heating cables or other approved means shall be provided to maintain this temperature during freezing weather. The storage box shall be placed on the site where approved, in location such that it will not be subject to any vibration or disturbance. Storage box shall not be placed in any building or shanty while it is being used for storing specimens.

D. Should the average strength of the test cylinders fall below the required strength, the Architect may require changes in the proportion to apply to the remainder of the work or may require load tests and/or cores at the Contractor's expense on the portion of the structure which fails to develop the required strength or may require additional curing, the load test shall conform to the requirements of the Building Code Requirements for Reinforced Concrete (ACI 318, latest edition). If the concrete does not meet the specified requirements, the Architect may condemn such concrete already in place and the Contractor, at his own expense, shall remove such condemned concrete and replace same with new concrete to the satisfaction of the Architect. Use of high early strength cement will not be permitted without written approval of the Architect.

1.06 PROJECT CONDITIONS

A. General: The contractor shall ensure that all proper project conditions are in place, ready for the setting of forms, reinforcement and subsequent concrete pouring, prior to the commencement of the work. Commencement of work constitutes contractor acceptance of all existing conditions.

1.07 CONTROLLED CONCRETE

A. Concrete shall be composed of Portland Cement, fine aggregate, coarse aggregate, and water or as otherwise composed via approved mix design.

1. Additional materials may include: slag, admixtures, fibers, colorants, or special purpose admixtures.

B. All concrete, unless otherwise specified or called for on the drawings, shall be controlled concrete as defined and regulated in the local building code and by the American Concrete Institute and its **ultimate compressive strength at the end of 28 days shall be not less than 4,000 pounds per square inch for foundations, walls and footings, 4,500 pounds per square inch for slabs-on-ground elevated slabs, and other building concrete, and 4,500 pounds per square inch for exterior concrete including, but not limited to, sidewalks, stairs, ramps, driveway aprons and curbing, unless otherwise indicated on structural drawings.**

C. Before the work is begun, the Contractor shall have preliminary trial tests made by a laboratory approved by the Architect to determine the mixture required to give the strength specified. Concrete shall be designed in accordance with the A.C.I. *Standard Recommended Practice for Selecting Proportions for Concrete* (ACI-513) to produce the strength required. Concrete shall be so designed that the concrete materials will not segregate nor shall excessive bleeding occur. Tests shall be made in accordance with ASTM C-39. The laboratory trial mixture for each mix design shall develop a concrete of compressive strength at 28 days of 1,200 psi higher than the required minimum for each of the strengths indicated to be acceptable for use in the field, but in no case shall cement content be less than 6 bags per cubic yard for 4,000 psi and 6 1/2 bags for 4,500 psi concrete. The proposed mixture must be approved by the Architect before the Contractor proceeds with the work.

D. Upon approval by the Architect, the Contractor will be allowed to proceed with the work if the laboratory trial mixture develops a compressive strength of 70% of the required ultimate strength at the end of seven (7) days.

E. If, during the progress of the work, it is found that the required workability and strength cannot be attained with the materials furnished by the Contractor, the Architect may order such changes in proportions or materials or both as may be necessary to secure the desired properties.

F. The proportions of aggregate to cement shall be such as to produce a mixture which will work readily into the corners and around reinforcement but without permitting the materials to segregate or excess free water to collect on the surfaces. The combined aggregates shall be of such composition of sizes that when separated on the No. 4 standard sieve, the weight passing the sieve (fine aggregate) shall be not less than 40% or greater than 50% of the total, unless otherwise directed. Maximum size of coarse aggregate in slab, beams, and columns shall be 3/4" and in walls and footings 1 1/2".

G. The source of supply of the aggregate shall not change during the course of the job without previous notice to the Architect, and the materials from any new source shall be subject to acceptance or rejection based upon tests to be made by the Testing Laboratory at the Contractor's expense.

1.08 DELIVERY, STORAGE AND HANDLING

A. Protect materials delivered from the elements and from otherwise being damaged on site.

B. Any materials damaged on site due to improper delivery, storage or handling shall not be incorporated in the project and shall be replaced at no cost to the Owner.

C. Deliver, store and handle steel reinforcement to prevent bending and damage.

PART 2 - PRODUCTS

2.01 FORM MATERIALS

A. Forms for Exposed Finish Concrete: Plywood, metal, metal-framed plywood faced, or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings.

B. Forms for Unexposed Finish Concrete: Plywood, lumber, metal, or other acceptable material. Provide lumber dressed on at least two edges and one side for tight fit.

C. Form Coatings: Provide commercial formulation form-coating compounds that will not bond with, stain, nor adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

D. Form Ties: Factory-fabricated, adjustable-length, removable or snap-off metal form ties, designed to prevent form deflection and to prevent spalling concrete upon removal. Provide units which will leave no metal closer than 1-1/2" to surface.

1. Provide ties which, when removed, will leave holes not larger than 1" diameter in concrete surface.

2.02 REINFORCING MATERIALS

A. Reinforcing Bars: All reinforcing steel shall conform to ASTM A615, Grade 60, deformed (60 KSI yield stress) and be rolled from intermediate grade new steel billets.

B. Welded Wire Fabric: All reinforcement mesh shall be electric-welded wire fabric with an ultimate tensile strength of not less than 55,000 pounds per square inch. All reinforcement mesh shall conform to ASTM A-185.

C. Supports for Reinforcement: Provide bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Use wire bar type supports complying with CRSI specifications (brick is not acceptable other than for slabs on ground).

1. For slabs-on-grade, use supports with sand plates or horizontal runners where base material will not support chair legs. Precast concrete bricks are acceptable for slab on ground construction.

2. For exposed-to-view concrete surfaces, where legs of supports are in contact with forms, provide supports with legs which are plastic protected (CRSI, Class 1) or stainless steel protected (CRSI, Class 2).

3. Certified copies of mill reports shall accompany all deliveries of reinforcing steel, identified to indicate the minimum yield strength of the furnished bars.

4. Copies of the manufacturer's affidavit shall accompany all deliveries of welded wire fabric certifying its minimum tensile strength.

D. For LEED projects all steel reinforcement to contain minimum 90% combined post-consumer and post-industrial recycled content.

2.03 CONCRETE MATERIALS

A. Portland Cement: ASTM C 150, Type I.

1. Use one brand of cement throughout the project, unless otherwise acceptable to the Architect.

B. For LEED projects Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

1. Provide no more than 25% within the mix for use on exposed slabs on grade, elevated slabs, sidewalks, ramps and stairs.

2. Provide no more than 40% within the mix for use on foundation walls, grade beams, piers, footings, etc.

C. Normal Weight Aggregates: ASTM C33, and as herein specified. Provide aggregates from a single source for exposed concrete.

1. For exterior exposed surfaces, do not use fine or coarse aggregates containing spalling-causing deleterious substances.

2. Local aggregates not complying with ASTM C 33 but which have shown by special test or actual service to produce concrete of adequate strength and durability may be used when acceptable to the Architect.

3. Coarse aggregates for all stone concrete and fine aggregate shall conform to ASTM Designation C33 - well graded from fine to coarse with the specified limits. The maximum size of the aggregate 3/4" in slabs, beams and columns and 1-1/2” in walls and footings and not larger than one-fifth (1/5) of the narrowest dimension between the sides of the forms of the member for which the concrete is to be used, not larger than three-fourths (3/4) of the minimum clear spacing between reinforcing bars.

4. Coarse aggregate for stone concrete shall consist of crushed stone or natural or crushed gravel, having clean, hard, strong, uncoated particles free from injurious amounts of soft, thin, elongated, or laminated pieces, alkali, organic, or other deleterious matter.

5. Fine aggregate for stone concrete - sand, stone screenings, or other inert material with similar characteristics having clean, strong, durable, uncoated grains, and free from lumps, salt, or flaky particles, clay, shale, alkali, organic matter, or other deleterious substance.

6. Aggregates shall be graded as follows:

Coarse Aggregate	Percent Retained
1" sieve	0
3/4" sieve	0 - 10
3/8" sieve	45 - 80
No. 4 sieve	90 – 100

Fine Aggregates	By Weight Passing
Passing 1/4" square opening	100%
Passing No. 4 sieve	95 - 100%
Passing No. 16 sieve	50 - 85%
Passing No. 50 sieve	15 - 25%
Passing No. 100 sieve	2 - 8%

D. Anti-shrinkage grout to be used for grouting in of bearing plates, anchors, and inserts shall be Master Builders *"Embecco"* premix or approved equal.

E. Admixtures shall be used only with the prior written approval of the Architect. All mixtures specified herein or proposed for use by the Contractor shall be of a manufacturer as approved by the Architect and used strictly in accordance with the manufacturer's directions.

1. A set-controlling, water-reducing admixture: *"Pozzolith"* manufactured by Master Builders or approved equal.

2. Air-entraining Admixture: ASTM C-260, certified by manufacturer to be compatible with other required admixtures.

a. Available Products: Subject to compliance with requirements, products which may be incorporated in the work include, but are not limited to, the following:

1) "Air-Mix"; Euclid Chemical Company.
2) "Sika Aer"; Sika Corporation.
3) "MB-VR or MB-AE"; Master Builders.
4) "Darex AEA" or "Daravair"; W.R. Grace.
5) "Edoco 2001 or 2002"; Edoco Technical Products.
6) "Air-Tite"; Gifford Hill/American Admixtures.

b. Air-entraining admixtures shall be used for all concrete exposed to weather.

F. Water: Water used in mixing concrete shall be clean, potable (drinkable), and free from injurious amounts of oils, acids, alkalis, organic materials, or other deleterious materials. (complying with ASTM C94).

2.04 RELATED MATERIALS

A. Reglets: Where resilient or elastomeric sheet flashing or bituminous membranes are terminated in reglets, provide reglets of not less than 26 gauge galvanized sheet steel. Fill reglet or cover face opening to prevent intrusion of concrete or debris.

1. Polyethylene sheet not less than 8 mils thick.

B. Non-shrink Grout: CRD-C 621, factory pre-mixed grout.

1. Available Products: Subject to compliance with requirements, products which may be incorporated in the work include, but are not limited to, the following:

a. Non-metallic:

1) "Set Grout"; Master Builders.
2) "Sonogrout"; Sonneborn-Rexnord.
3) "Euco-NS"; Euclid Chemical Company.
4) "Supreme"; Gifford-Hill/American Admixtures.
5) "Crystex"; L & M Construction Chemical Company.
6) "Sure-Grip Grout"; Dayton Superior Corporation.
7) "Horngrout"; A.C. Horn, Inc.
8) "Five Star Grout"; U.S. Grout Corporation.

C. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per square yard, complying with AASHTO M 182, Class 2.

1. For LEED projects Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

    a. Provide no more than 25% within the mix for use on exposed slabs on grade, elevated slabs, sidewalks, ramps and stairs.

    b. Provide no more than 40% within the mix for use on foundation walls, grade beams, piers, footings, etc.

D. Moisture-Retaining Cover: One of the following, complying with ASTM C 171:

    1. Waterproof paper.

    2. Polyethylene film.

    3. Polyethylene-coated burlap.

E. Liquid Membrane-Forming Curing Compound: Concrete slabs shall be cured by means of pigmented curing compound of a type not affecting adhesion of resilient flooring or other surface finish, of approved manufacture, conforming to ASTM C-309, and applied in strict accordance with manufacturer's directions. Liquid type membrane-forming curing compound complying with ASTM C 309, Type 1, Class A. Moisture loss not more than 0.055 gr./sq. cm. when applied at 200 sq. ft./gal.

    1. Available Products: Subject to compliance with requirements, products, which may be incorporated in the work include, but are not limited to, the following:

        1) "Masterseal"; Master Builders.
        2) "A-H 3 Way Sealer"; Anti-Hydro Waterproofing Company.
        3) "Ecocure"; Euclid Chemical Company.
        4) "Clear Seal"; A.C. Horn, Inc.
        5) "Sealco 309"; Gifford-Hill/American Admixtures.
        6) "J-20 Acrylic Cure"; Dayton Superior.
        7) "Spartan-Cote"; The Burke Company.
        8) "Sealkure"; Toch Div. - Carboline.
        9) "Kure-N-Seal"; Sonneborn-Rexnord.
        10) "Polyclear"; Upco Chemical/USM Corp.
        11) "L & M Cure"; L & M Construction Chemicals.
        12) "Klearseal"; Setcon Industries.
        13) "LR-152"; Protex Industries.
        14) "Hardtop"; Gifford-Hill.

    2. Liquid membrane curing compounds may only be used on slabs where there is no other finish flooring material to be installed.

F. Bonding Compound: Polyvinyl acetate or acrylic base.

    1. Available Products: Subject to compliance with requirements, products which may be incorporated in the work include, but are not limited to, the following:

        a. Polyvinyl Acetate (Interior Only):

            1) "Eucoweld"; Euclid Chemical Company.
            2) "Weldcrete"; Larsen Products Corporation.

        b. Acrylic or Styrene Butadiene:

1) "J-40 Adbond Bonding Agent"; Dayton Superior Corp.
2) "Everbond"; L & M Construction Chemicals.
3) "Hornweld"; A.C. Horn, Inc.
4) "Sonocrete"; Sonneborn-Rexnord.
5) "Acrylic Bondcrete"; The Burke Company.
6) "SBR Latex"; Euclid Chemical Company.
7) "Daraweld C"; W.R. Grace.

G. Epoxy Adhesive: ASTM C 881, two component material suitable for use on dry or damp surfaces. Provide material "Type," "Grade," or "Class" to suit project requirements.

2. Available Products: Subject to compliance with requirements, products which may be incorporated in the work include, but are not limited to, the following:

a. *"Thiopoxy"*; W.R. Grace.
b. *"Epoxtite"*; A.C. Horn, Inc.
c. *"Edoco 2118 Epoxy Adhesive"*; Edoco Technical Products.
d. *"Sikadur Hi-Mod"*; Sika Chemical Corporation.
e. *"Euco Epoxy 452 or 620"*; Euclid Chemical Company.
f. *"Patch and Bond Epoxy"*; The Burke Company.
g. *"Concresive 1001"*; Adhesive Engineering Company.

H. Joint Fillers / Filler Strips: Joints for slabs on ground shall be formed with preformed, non-exuding bituminous fiber expansion filler, which shall extend full length and depth of slabs. Vertical expansion joints shall be constructed complete with water dams or waterstops and joint filler.

I. Vapor Barriers: Under typical interior slabs where finished flooring does not involve wood, provide non-woven, polyester, reinforced, polyethylene coated sheet of 15 mil thickness.

1. Vapor barrier membrane must have the following properties:

a. Permeance as tested after mandatory conditioning (ASTM E 1745 paragraphs 7.1.2-5): less than 0.01 perms (gran/ft^2/hr/in-Hg).

b. Other performance criteria:

1) Strength: Class A (ASTM E 1745).
2) Minimum thickness of plastic retarder material: 15 mils.

c. Basis of Design: Stego Wrap 15-mil Vapor barrier by Stego Industries, LLC.

d. Or Architect approved equal.

J. Vapor barrier under interior slabs where finished flooring involves wood assemblies such as gymnasium and stages provide bituminous vaporproofing/waterproofing membrane.

1. Vapor barrier must have seven-ply, weather-coated, permanently bonded, semi-flexible bituminous core board composed of a 3-ply plasmatic matrix sealed between liners of asphalt-impregnated felt and a glass mat liner. Vapor barrier shall consist of an asphalt weather coat and covered with a polyethylene anti-stick sheet. Vapor barrier shall meet or exceed all requirements of ASTM E 1993-98 and shall have the following characteristics:

a. Minimum permeance ASTM F1429, calibrated to ASTM E96, Water Method: 0.0011 Perms.

b. Tensile Strength ASTM E154, Section 9: 156 LBS. force.

c. Puncture Resistance ASTM E154: 149 LBS. force/inch.

d. Pre-molded Membrane® Vapor Seal with Plasmatic Core by W.R. Meadows, W.R. Meadows, Inc., PO Box 338, Hampshire, Illinois 60140-0338. (800) 348-5976. (847) 683-4500. Fax (847) 683-4544. Website: www.wremeadows.com.

K. Water Stops: Provide all waterstops similar to or equal to those as produced by *Greenstreak, Inc.,* as required by the drawings, either embedded in concrete, or across and/or along the joint, to form a watertight diaphragm that prevents the passage of fluid through the joint.

L. All other materials as hereinafter specified. All set-in-place concrete elements (i.e. – pre-fabricated water stops, cast aluminum nosings, exterior stair components, etc.) shall be installed in conformance with their associated specification sections, and/or manufacturer's installation instructions if no specification is provided and in complete coordination with the work of this Section.

2.05 PROPORTIONING AND DESIGN OF MIXES

A. Design mix of all concrete shall provide the following properties, as indicated on the drawings and schedules:

1. 4,000 psi 28-day compressive strength; W/C ratio, 0.58 maximum (non-air-entrained), 0.46 maximum (air-entrained).

2. 4,500 psi 28-day compressive strength; W/C ratio, 0.67 maximum (non-air-entrained), 0.54 maximum (air-entrained).

3. Do not air entrain concrete for trowel finished interior floors and suspended slabs, including polished concrete floors. Do not allow entrapped air content to exceed 3 percent.

B. Stone concrete shall weigh approximately 144 pounds per cubic foot. Exterior concrete, exposed to weather, shall have a water cement ratio not to exceed 6 1/2 gallons per sack of cement and an air entraining agent approved by the Architect to be added to obtain concrete with an air content not less than 4% nor more than 6% conforming to ASTM C-175, latest edition.

C. Prepare design mixes for each type and strength of concrete laboratory trial batch methods as specified in ACI 301. Use an independent testing facility acceptable to Architect for preparing and reporting proposed mix designs. The testing facility shall not be the same as used for field quality control testing.

D. Submit written reports to Architect and Structural Engineer of each proposed mix for each class of concrete at least 15 days prior to start of work. Do not begin concrete production until mixes have been reviewed and accepted by the Architect.

E. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant; at no additional cost to the Owner and as accepted by the Architect. Laboratory test data for revised mix design and strength results must be submitted to and accepted by the Architect before using in work.

F. Admixtures: ONLY TO BE USED WITH PRIOR WRITTEN APPROVAL OF THE ARCHITECT!

1. Use water-reducing admixture or high range water-reducing admixture (super plasticizer) in concrete as required for placement and workability.

2. Use non-chloride accelerating admixture in concrete slabs placed at ambient temperatures below 50°F (10°C).

3. Use high-range water-reducing admixture in pumped concrete, concrete for industrial slabs, architectural concrete, parking structure slabs, concrete required to be watertight, and concrete with water/cement ratios below 0.50.

4. Use air-entraining admixture in exterior exposed concrete, unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content with a tolerance of plus or minus 1-1/2 percent within the following limits:

   a. Concrete structures and slabs exposed to freezing and thawing, de-icer chemicals, or subjected to hydraulic pressure.

   b. 4.5 percent (moderate exposure).
      5.5 percent (severe exposure) 1-1/2" maximum aggregate.

   c. 4.5 percent (moderate exposure)
      6.0 percent (severe exposure) 1" maximum aggregate.

5. Use admixtures for water-reducing and set-control in strict compliance with manufacturer's directions.

G. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows:

1. Ramps, slabs, and sloping surfaces: Not more than 3".

2. Reinforced foundation systems: Not less than 1" and not more than 3".

3. Concrete containing HRWR admixture (super-plasticizer): Not more than 8" after addition of HRWR to site-verified 2"-3" slump concrete.

4. Other concrete: Not less than 1" and not more than 4".

2.06 MIXING

A. All concrete shall be machine mixed or transit mixed.

B. Hand mixing will not be permitted unless approved by the Architect. Mixing shall conform to ASTM C-94 and ACI-304. On-site mixing will not be permitted unless approved by the Architect/Engineer.

C. Machine mixing shall be done in an approved batch mixer. Sand and gravel shall be measured by weighing. Mixing shall be continued for at least one minute after all materials are in the mixing drum at a speed of not less than twelve nor more than eighteen revolutions per minute. The volume of the mixing materials per batch shall not exceed manufacturer's rated capacity of mixer. A water gauge shall be provided to deliver the exact predetermined amount of water for each batch. Mixing shall be continued for at least 1 minute for 1 cubic yard of concrete plus 1/4 minute for each additional cubic yard of concrete after all materials.

D. Transit mix concrete shall conform to the specification and tests herein described and to ASTM C-94 and ACI-304, most current edition(s); and further provided that the central plant producing the concrete and equipment transporting it are, in the opinion of the Architect, suitable for production and transportation of controlled concrete. The maximum elapsed time between the time of the introduction of water and placing shall be one hour.

E. Exterior concrete exposed to weather: Water cement ratio shall not exceed 6 1/2 gallons per sack of cement and an air-entraining agent approved by the Architect shall be added to obtain concrete with an air content not less than 4% nor more than 6% conforming to ASTM C-175, latest edition.

F. Ready-mix Concrete: Comply with the requirements of ASTM C 94, and as specified herein.

1. During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C 94 may be required.

PART 3 - EXECUTION

3.01 GENERAL

A. The Contractor shall notify the Architect, Construction Manager (when applicable) and the approved testing laboratory at least 24 hours in advance of the time he intends to use ready mixed concrete so that an inspector may be assigned to the plant to supervise the mix, and be available at the site to witness pour and sampling.

B. With each delivery of concrete, furnish to the superintendent at the building site a delivery slip (certified by laboratory representative) showing mix, quantity of cement, fine and coarse aggregates, and water, and time of departure from the plant.

C. Under no circumstances shall transit-mixed concrete be delivered from the plant, unless mix design has been approved by the Architect and inspector of testing laboratory. The approved plant and its operating equipment shall be under the supervision of the testing laboratory appointed by and directly responsible to the Architect.

D. Coordinate the installation of joint materials and vapor retarders with placement of forms and reinforcing steel.

3.02 FORMS

A. Design, erect, support, brace, and maintain form work to support vertical and lateral, static, and dynamic loads that might be applied until such loads can be supported by concrete structure. Construct formwork so that concrete members and structures are of correct size, shape, alignment, elevation, and position. Maintain formwork construction tolerances complying with ACI 347.

B. Design form work to be readily removable without impact, shock, or damage to cast-in-place concrete surfaces and adjacent materials.

C. Construct forms to sizes, shapes, lines, and dimensions shown, and to obtain accurate alignment, location, grades, level and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages, inserts, and other features required in the work. Use selected materials to obtain required finishes. Solidly butt joints and provide back up at joints to prevent leakage of cement paste.

D. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces.

1. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, reglets, recesses, and the like, to prevent swelling and for easy removal.

E. Provide temporary openings where interior area of formwork is inaccessible for cleanout, for

inspection before concrete placement, and for placement of concrete. Securely brace temporary openings and set tightly to forms to prevent loss of concrete mortar. Locate temporary openings on forms at inconspicuous locations.

F. Chamfer exposed corners and edges as indicated, using wood, metal, PVC, or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.

G. Provisions for Other Trades: Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses, and chases from trades providing such items. Accurately place and securely support items built into forms.

H. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, etc., or other debris just before concrete is placed. Retightening forms and bracing after concrete placement as required to eliminate mortar leaks and maintain proper alignment.

3.03 PREPARATION OF FORM SURFACES

A. Clean re-used forms of concrete matrix residue, repair and patch as required to return forms to acceptable surface condition.

B. Coat contact surfaces of forms with a form-coating compound before reinforcement is placed.

C. Thin form-coating compounds only with thinning agent of type, amount, and under conditions of form-coating compound manufacturer's directions. Do not allow excess form-coating material to accumulate in forms or to come into contact with in-place concrete surfaces against which fresh concrete will be placed. Apply in compliance with manufacturer's instructions.

D. Coat steel forms with a non-staining, rust preventative form oil or otherwise protect against rusting. Rust-stained steel formwork is not acceptable.

3.04 VAPOR RETARDER INSTALLATION

A. Following leveling and tamping of granular base for slabs on grade, place vapor retarder sheeting with longest dimension parallel with direction of pour. Lap joints and seal with appropriate tape.

B. All concrete slabs on grade or fill shall receive membrane placed on porous fill prior to placing reinforcing. Membrane shall be placed with 6" laps at ends and sides, and without tears or ruptures at the time concrete is placed thereon.

C. Both standard vapor barrier and pre-molded membrane when applicable shall be installed in accordance with the manufacturers requirements.

3.05 PLACING OF REINFORCEMENT

A. Comply with *Concrete Reinforcing Steel Institute*'s recommended practice for *"Placing Reinforcing Bars",* for details and methods of reinforcement placement and supports, and as specified herein.

B. All reinforcement shall be rigidly wired in place with adequate spacers and zinc coated tie chairs. Bar supports shall be not more than 4'-0" o.c. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials which reduce or destroy bond with concrete. Reinforcement for concrete slabs on ground or fill shall be supported on precast concrete bricks. On formwork, galvanized coated chairs or spacers shall be used.

C. Reinforcement shall be placed so that where temperature shrinkage of bars occur, they shall be no closer to top of slab than 3/4". Coordinate with work under Electrical Contract so that conduits may

be replaced to obtain this result.

D. Accurately position, support, and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers as required.

E. All reinforcement shall be bent cold. The minimum radius of bend shall be 4 diameters for bars 5/8" round or less and 6 diameters for larger bars.

F. Place reinforcement to obtain at least minimum coverage for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

G. Install welded wire fabric in as long lengths as practicable. Lap adjoining pieces at least one full mesh and lace overlaps with wire. Offset end laps in adjacent widths to prevent continuous laps in either direction.

H. Do not cut or puncture vapor barrier. Repair damage and reseal vapor barrier in accordance with manufacturer's requirements before placing concrete.

I. Epoxy-Coated Reinforcement: Repair cut and damaged epoxy coating with epoxy repair coating according to ASTM D 3963/D 3963M. Use epoxy-coated steel wire ties to fasten epoxy-coated steel reinforcement.

J. Zinc-Coated Reinforcement: Repair, cut and damaged zinc coatings with zinc repair material according to ASTM A 780. Use galvanized steel wire ties to fasten zinc-coated steel reinforcement.

3.06 EXPANSION JOINTS

A. Joints for slabs on ground shall be formed with preformed, non-exuding bituminous fiber expansion filler, which shall extend full length and depth of slabs.

B. Vertical expansion joints shall be constructed complete with water dams or waterstops and joint filler.

C. Joint material in exterior concrete, sidewalks, plazas, stairs, ramps, curbs, etc. shall be held 1/4" from finished surface and finished with approved traffic grade sealant.

3.07 OTHER JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.

1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.

2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.

3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints to girders a minimum distance of twice the beam width from a beam-girder intersection.

4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.

5. Space vertical joints in walls as indicated per typical detail. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.

6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construction contraction joints for a depth as follows:

1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch (3.2 mm). Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.

2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3.2 mm-) wide joints 1" deep into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated.

2. Terminate full-width joint-filler strips not less than 1/2 inch (13 mm) or more than 1 inch (25 mm) below finished concrete surface where joint sealants, specified in Division 07 Section "Joint Sealant," are indicated.

3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip section together.

E. Doweled Joints: Install dowel bards and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.08 INSTALLATION OF EMBEDDED ITEMS

A. General: Set and build into work anchorage devices and other embedded items required for other work that is attached to or supported by cast-in-place concrete. Use setting drawings, diagrams, instructions, and directions provided by suppliers of items to be attached thereto.

1. Install reglets to receive top edge of foundation sheet waterproofing, and to receive thru-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, relieving angles, and other conditions.

2. Install anchor bolts, accurately located, to elevations required.

B. Edge Forms and Screed Strips for Slabs: Set edge forms or bulkheads and intermediate screed straps for slabs to obtain required elevations and contours in finished slab surface. Provide and secure units sufficiently strong to support types of screed strips by use of strike-off templates or accepted compacting type screeds.

3.09 CONCRETE PLACEMENT

A. The Contractor shall notify the Owner, the Architect, the Construction Manager (when applicable)

and the testing laboratory at least 48 hours in advance of the time he intends to place concrete in order to afford them the opportunity to observe placing operations. The Contractor shall obtain the Architect's and testing laboratory's permission prior to placing concrete.

B. All forms must be absolutely clean and free from shavings and dirt prior to starting concrete operations.

C. Under no circumstances shall concrete be deposited in or under water, nor on muddy or frozen ground.

D. Pre-placement Inspection: Before placing concrete, the Contractor shall inspect and complete all formwork installation, reinforcing steel, and items to be embedded or cast-in. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work. Moisten wood forms immediately before placing concrete where form coatings are not used. Protect adjacent finish materials against spatter during concrete placement.

    1. Apply temporary protective covering to lower 2' of finished walls adjacent to poured floor slabs and similar conditions, and guard against spattering during placement under any and all conditions of placement.

E. General: Comply with ACI 304 *"Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete"* and as herein specified.

    1. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete as nearly as practicable to its final location to avoid segregation.

    2. Before depositing new concrete against concrete which has set, the forms shall be re-tightened and the surface of the concrete placed earlier shall be thoroughly roughened, cleaned of all foreign matter and laitance, shall be slushed with water, slushed with a coat of neat cement grout, and the new concrete shall be placed before the grout has attained its initial set, or the work shall be performed in such other approved manner as will insure a thorough bonding to the work.

F. All concrete must be placed as rapidly as possible after mixing and thoroughly spaded and rammed in place. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping. All possible care is to be exercised to prevent honeycombing. Concrete shall be placed in layers not over 12" thick and shall not be dumped from height over three feet. Concrete that must be placed more than 3 feet below placement level shall be chuted at a slope of not more than 1 in 2 or deposited through elephant trunks.

G. Concrete shall be placed in one operation up to temporary bulkheads, which shall be located, in general, at points of minimum shear.

H. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers not deeper than 12" and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.

    1. Use equipment and procedures for consolidation of concrete in accordance with ACI 309.

    2. All structural concrete shall be placed with the aid of mechanical vibrators. The vibrators shall be of a type and design approved by the Architect and shall be capable of transmitting to the concrete not less than 3,000 impulses per minute. The vibration shall be sufficiently intense to visibly affect the concrete over a radius of at least 2'-0" around the point of application but shall not be applied long enough to segregate the ingredients. Insert and withdraw vibrators vertically

at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to rapidly penetrate placed layer and at least 6" into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. Enough vibration shall be used to cause all the concrete to flow or settle readily into place. The vibration shall be of internal type, applied directly to the concrete and not through the forms, except in sections too thin to permit the insertion of the internal type, in which case form vibration may be employed at the discretion of the Architect. Do not use vibrators to transport concrete inside forms.

I. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.

1. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.

2. Bring slab surfaces to correct level with straightedge and strikeoff. Use bull floats or darbies to smooth surface, free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.

3. Maintain reinforcing in proper position during concrete placement operations.

4. Slope surfaces uniformly to drains where required.

5. For exterior placement such as sidewalks, plazas, driveway aprons, curbing and equipment pads where no vapor barrier is required, the subgrade shall be moist before placing concrete. Dry or dusty subgrades shall be moistened to a minimum depth of one inch (1”) prior to placing concrete.

J. Cold Weather Placing: Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with ACI 306 and as herein specified.

1. When air temperature has fallen to or is expected to fall below 40°F (4°C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50°F (10°C), and not more than 80°F (27°C) at point of placement.

a. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

b. Do not use calcium chloride, salt, and other materials containing antifreeze agents or chemical accelerators, unless otherwise accepted in mix designs.

c. Protection of Footings Against Freezing: Cover completed work at footing level with sufficient temporary or permanent cover as required to protect footings and adjacent subgrade against possibility of freezing; maintain cover for time period as necessary.

K. Hot Weather Placing: When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified. Concrete placed in warm weather shall be kept well sprinkled with water for at least one week after placing, unless other approved curing methods are used. No concrete shall be placed when the atmospheric temperature is above 90°F.

1. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90°F (32°C). Mixing water may be chilled or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Use of liquid nitrogen to cool concrete is Contractor's option.

2. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.

    a. Fog spray forms, reinforcing steel, and subgrade just before concrete is placed.

3. Use water-reducing retarding admixture (Type D) when required by high temperatures, low humidity, or other adverse placing conditions, only upon approval of the Architect.

3.10 FINISH OF FORMED SURFACES

A. Rough Form Finish: For formed concrete surfaces not exposed to view in the finish work or by other construction, unless otherwise shown or indicated. This is the concrete surface having texture imparted by form facing material used, with tie holes and defective areas repaired and patched and fins and other projections exceeding 1/4" in height rubbed down or chipped off.

B. Smooth Form Finish: For formed concrete surfaces exposed to view, or that are to be covered with a coating material applied directly to concrete, or a covering material applied directly to concrete, such as waterproofing, dampproofing, veneer plaster, painting, or other similar system. This is as-cast concrete surface obtained with selected form facing material, arranged orderly and symmetrically with a minimum of seams. Repair and patch defective areas with fins or other projections completely removed and smoothed.

C. Smooth Rubbed Finish: Provide smooth rubbed finish to scheduled concrete surfaces, which have received smooth form finish treatment, immediately following form removal and not later than one day after form removal.

    1. Moisten concrete surfaces and rub with carborundum brick or other abrasive until a uniform color and texture is produced. Do not apply cement grout other than that created by the rubbing process.

D. Grout Cleaned Finish: Provide grout cleaned finish to scheduled concrete surfaces which have received smooth form finish treatment.

    1. Combine one part Portland cement to 1-1/2 parts fine sand by volume, and mix with water to consistency of thick paint. Proprietary additives may be used at Contractor's option. Blend standard Portland cement and white Portland cement, amounts determined by trial patches, so that final color of dry grout will match adjacent surfaces.

    2. Thoroughly wet concrete surfaces and apply grout to coat surfaces and fill small holes. Remove excess grout by scraping and rubbing with clean burlap. Keep damp by fog spray for at least 36 hours after rubbing.

E. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces occurring adjacent to formed surfaces, strike-off, smooth, and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.11 MONOLITHIC SLAB FINISHES

A. Scratch Finish: Apply scratch finish to monolithic slab surfaces that are to receive concrete floor topping or mortar setting beds for tile, Portland cement terrazzo, and other bonded applied cementitious finish flooring material, and as otherwise indicated.

    1. After placing slabs, plane surface to tolerances for floor flatness (F_F) of 15 and floor levelness (F_L) of 13. Slope surfaces uniformly to drains where required. After leveling, while sill plastic, roughen surface before final set, with stiff brushes, brooms, or rakes to provide a profile amplitude of ¼ inch (6 mm) in one direction.

B. Float Finish: Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as hereinafter specified, and slab surfaces which are to be covered with membrane or elastic waterproofing, membrane or elastic roofing, or sand-bed terrazzo, and as otherwise indicated.

1. After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating when surface water has disappeared or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven floats, or by hand floating if area is small or inaccessible to power units. Check and level surface plant to tolerances of F_F 18 - F_L 15. Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture.

C. Trowel Finish: Apply trowel finish to monolithic slab surfaces to be exposed to view and slab surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint, or other thin film finish coating system and below wood flooring systems.

1. After floating, begin first trowel finish operation using a hand or power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and with surface leveled to tolerances according to ASTM E 1155 (ASTM E1155M)for a randomly trafficked floor surface. Grind smooth surface defects which would telegraph through applied floor covering system.

a. Specified overall values of flatness: (F(F)35, and levelness, F(L)25, with minimum local values of flatness F(F)24 and levelness F(L)17 for slabs on grade.

2. Finish and measure surface so gap at any point between concrete surface and an unleveled, freestanding, 10-ft.- (3.05-m-) long straightedge resting on two high spots and placed anywhere on the surface does not exceed 1/8 inch (3.2 mm).

D. Trowel and Fine Broom Finish: Where ceramic or quarry tile is to be installed with either thin-set or thick-set mortar, apply trowel finish as specified, then immediately follow with slightly scarifying surface by fine brooming. Comply with flatness and levelness tolerances for trowel finished floor surfaces.

E. Non-Slip Broom Finish: Apply non-slip broom finish to exterior concrete platforms, steps, sidewalks, plazas, aprons, curbs and ramps, and elsewhere indicated.

1. Immediately after float finishing, slightly roughen concrete surface by brooming with fiber bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

F. Slip-Resistive Finish: Before final floating, apply slip-resistive aggregate finish where indicated and to concrete stair treads, platforms and ramps. Apply according to manufacturer’s written instructions and as follows:

1. Uniformly spread 25/100 sq. ft. (12 kg/10 sq. m) of dampened slip-resistive aggregate over surface in one or two applications. Tamp aggregate flush with surface, but do not force below surface.

2. After broadcasting and tamping, apply float finish.

3. After curing, lightly work surface with a steel wire brush or an abrasive stone and water to expose slip-resistive aggregate.

G. Dry-Shake Floor Hardener Finish: After initial floating, apply dry-shake floor hardener to surfaces according to manufacturer's written instructions as follows:

1. Uniformly apply dry-shake floor hardener at a rate of 100 lb/100 sq. ft. (49 kg/10 sq. m) unless greater amount is recommended by manufacturer.

2. Uniformly distribute approximately two-thirds of dry-shake floor hardener over surface by hand or with mechanical spreader, and embed by power floating. Follow power floating with a second dry-shake floor hardener application, uniformly distributing remainder of material, and embed by power floating.

3. After final floating, apply a trowel finish. Cure concrete with curing compound recommended by dry-shake floor hardener manufacturer and apply immediately after final finishing.

3.12 CONCRETE CURING AND PROTECTION

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

1. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting; keep continuously moist for not less than 7 days.

2. Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing for at least 7 days in accordance with ACI 301 procedures. Avoid rapid drying at end of final curing period.

3. The Contractor shall continuously protect cement finish floors from damage for the duration of the work by such means as approved by the Architect and shall leave same in perfect condition to receive other floor finishes or where exposed in the finished work, they shall be in perfect condition at completion and acceptance of the building.

B. Curing Methods: Perform curing of concrete by curing and sealing compound, by moist curing, by moisture-retaining cover curing, and by combinations thereof, as herein specified as appropriate to finished condition of concrete surface.

1. Provide moisture curing by following methods:

   a. Keep concrete surface continuously wet by covering with water.
   b. Continuous water-fog spray.
   c. Covering concrete surface with specified absorptive cover, thoroughly saturating cover with water and continuously keeping wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with 4" lap over adjacent absorptive covers.

2. Provide moisture-cover curing as follows:

   a. Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3" and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3. Provide curing and sealing compound to exposed interior slabs (no other finish materials) and to exterior slabs, walks, and curbs as follows:

   a. Apply specified curing and sealing compound to concrete slabs as soon as final finishing operations are complete (within 2 hours). Apply uniformly in continuous operation by power-spray or roller in accordance with manufacturer's directions. Recoat areas

subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.

b. Do not use membrane curing and sealing compounds compounds on surfaces which are to be covered with coating material applied directly to concrete, liquid floor hardener, waterproofing, dampproofing, membrane roofing, flooring (such as ceramic or quarry tile, vinyl tile, linoleum, glue-down carpet, etc.), painting, and other coatings and finish materials unless otherwise acceptable to the Architect.

C. Curing Formed Surfaces: Cure formed concrete surfaces, including undersides of beams, supported slabs, and other similar surfaces by moist curing with forms in place for full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as applicable.

D. Curing Unformed Surfaces: Cure unformed surfaces, such as slabs, floor topping, and other flat surfaces by application of appropriate curing method.

1. Final cure concrete surfaces to receive liquid floor hardener or finish flooring by use of moisture retaining cover, unless otherwise directed.

3.13 REMOVAL OF FORMS

A. Form work not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50°F (10°C) for 24 hours after placing concrete, provided concrete is sufficiently hard not to be damaged by form removal operations and provided curing and protection operations are maintained.

1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete-in-place unit concrete has achieved at least 70 percent of its 28-day design compressive strength.

2. Remove forms only if shores have been arranged to permit remove of forms without loosening or distributing shores.

B. Form facing material may be removed 4 days after placement, only if shores and other vertical supports have been arranged to permit removal of form facing material without loosening or disturbing shores and supports.

3.14 RE-USE OF FORMS

A. Clean and repair surfaces of forms to be re-used in work. Split, frayed, delaminated, or otherwise damaged form facing material will not be acceptable for exposed surfaces. Apply new form coating compound as specified for new form work.

B. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms close to joints. Align and secure joint to avoid offsets. Do not use "patched" forms for exposed concrete surfaces, except as acceptable to the Architect.

3.15 SHORES AND RESHORES

A. Comply with ACI 318 (ACI 318M) and ACI 301 for design, installation, and removal of shoring and re-shoring.

1. Do not remove shoring or re-shoring until measurement of slab tolerances is complete.

B. In multi-story construction, extend shoring or re-shoring over a sufficient number of stories to

distribute loads in such a manner that no floor or member will be excessively loaded or will induce tensile stress in concrete members without sufficient steel reinforcement.

C. Plan sequence of removal of shores and re-shores to avoid damage to concrete. Locate and provide adequate re-shoring support construction without excessive stress or deflection.

3.16 MISCELLANEOUS CONCRETE ITEMS

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

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with certified diagrams or templates of manufacturer finishing machines and equipment.

1. Grout base plates and foundations as indicated, using specified non-shrink grout. Use non-metallic grout for exposed conditions, unless otherwise indicated.

D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items. Cast-in safety inserts and accessories as shown on drawings. Screed, tamp, and finish concrete surfaces as scheduled.

E. Pits, Trenches, etc.: Build all pits, pit cleanouts, trap pits, trenches, curbs, and pads as required by the drawings and by job conditions.

F. Flexible Waterstops: Install in construction joints and at other joints indicated to form a continuous watertight diaphragm. Install in longest lengths practicable. Support and protect exposed waterstops during progress of the Work. Field fabricate joints in waterstops according to manufacturer’s written instructions.

G. Self-Expanding Strip Waterstops: Install in construction joints and at other locations indicated, according to manufacturer’s written instructions, adhesive bonding, mechanically fastening, and firmly pressing into place. Install in longest lengths practicable.

3.17 CONCRETE SURFACE REPAIRS

A. Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to Architect.

1. Cut out honeycomb, rock pockets, voids over 1/4" in any dimension, and holes left by tie rods and bolts down to solid concrete but in no case to a depth of less than 1". Make edges of cuts perpendicular to the concrete surface. Before placing cement mortar, thoroughly clean, dampen with water, and brush-coat the area to be patched with specified bonding agent. Place patching mortar after bonding compound has dried.

a. For exposed-to-view surfaces, blend white Portland cement and standard Portland cement so that, when dry, patching mortar will match color surrounding. Provide test areas at inconspicuous location to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.

B. Repair of Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Architect. Surface defects, as such, include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, fins and other projections on surface, and stains or other discolorations that cannot be removed by cleaning. Flush out form tie holes, fill with dry pack mortar or precast cement cone plugs secured in place with bonding agent.

1. Repair concealed formed surfaces, where possible, that contain defects that affect the durability of concrete. If defects cannot be repaired, remove and replace concrete.

C. Repair of Unformed Surfaces: Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface plane to tolerances specified for each surface and finish. Correct low and high areas as herein specified. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness, using a template having required slope.

1. Repair finished unformed surfaces that contain defects which affect durability of concrete. Surface defects, as such, include crazing, cracks in excess of 0.01" wide or which penetrate to reinforcement or completely through non-reinforced sections regardless of width, spalling, pop-outs, honeycomb, rock pockets, and other objectionable conditions.

2. Correct high areas in unformed surfaces by grinding, after concrete has cured at least 14 days.

3. Correct low areas in unformed surfaces during or immediately after completion of surface finishing operations by cutting out low areas and replacing with fresh concrete. Finish repaired areas to blend into adjacent concrete. Patching compounds may be used when acceptable to Architect.

4. Repair defective areas, except random cracks and single holes not exceeding 1" diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts and expose reinforcing steel with at least 3/4" clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding compound. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

5. Repair isolated random cracks and single holes not over 1" diameter by dry-pack method. Groove top of cracks and cutout holes to sound concrete and clean of dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding compound. Mix dry-pack, consisting of one part Portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing. Place dry pack after bonding compound has dried. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for not less than 72 hours.

6. Perform structural repairs with prior approval of Architect or Structural Engineer for method and procedure, using specified epoxy adhesive and mortar.

7. Repair methods not specified above may be used, subject to acceptance of Architect.

3.18 CUTTING, PATCHING, AND REMOVAL

A. The Contractor shall be responsible for all cutting and patching of his work as required to accommodate work of this section and of other sections and contracts.

B. Materials which have become damaged or have been condemned shall be removed from the site.

END OF SECTION

DIVISION 05 – METALS

SECTION 051200 – STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this section. This Section includes the following: structural steel, grout.

1.02 SUMMARY

A. Extent of structural steel work is shown on drawings, including schedules, notes, and details to show size and location of members, typical connections, and type of steel required.

B. Structural steel is that work defined in American Institute of Steel Construction (AISC) *"Code of Standard Practice",* and as otherwise shown on drawings.

C. Miscellaneous metal fabrications are specified elsewhere in Division 05. Refer to Division 03 for anchor bolt installation in concrete; Division 04 for masonry.

D. Source Quality Control: Materials and fabrication procedures are subject to inspection and tests in mill, shop, and field, conducted by a qualified inspection agency. Such inspections and test will not relieve Contractor of responsibility for providing materials and fabrication procedures in compliance with specified requirements.

1. Promptly remove and replace materials or fabricated components which do not comply.

E. Design of Members and Connections: Details shown are typical; similar details apply to similar conditions, unless otherwise indicated. Verify dimensions at site whenever possible without causing delay in the work. Contractor shall retain the services of a licensed professional engineer for the design of any connections not shown on the drawings.

1. Promptly notify Architect whenever design of members and connections for any portion of structure are not clearly indicated.

F. Related Sections include the following:

1. Section 053000 – Metal Decking; for field installation of shear connectors.

2. Section 055000 – Metal Fabrications; for steel lintels or shelf angles not attached to structural-steel frame, miscellaneous steel fabrications and other metal items not defined as structural steel, including, but not limited to, loose steel bearing plates for structural steel and miscellaneous steel shapes for framing deck openings.

1.03 DEFINITIONS

A. Structural Steel: Elements of structural-steel frame, as classified by AISC's "Code of Standard Practice for Steel Buildings and Bridges," that support design loads.

1.04 PERFORMANCE REQUIREMENTS

A. Structural Performance: Engineer structural steel connections required by the Contract Documents

to be selected or completed by the fabricator to withstand design loadings indicated.

B. Connections: Provide details of connections to withstand loads and other design criteria indicated and to comply with other information and restrictions indicated.

1. Steel fabricator shall detail connections using sections, details, typical details, and other requirements indicated on the structural drawings and using the schematic details indicated and AISC's "Manual of Steel Construction, Allowable Stress Design," Part 4 to resist loads and other design criteria specified on the structural drawings.

C. Construction: Type 2, simple framing.

D. Engineering Responsibility: Under Base Bid submitted, the Prime Contractor shall engage a fabricator who utilizes a qualified professional engineer to prepare calculations, Shop Drawings, and other structural data for structural steel connections.

1.05 SUBMISSIONS

A. All submissions shall be made in accordance with Section 013300 – Submittal Procedures.

B. Product Data: Submit producer's or manufacturer's specifications and installation instructions for the following products. Include laboratory test reports and other data to show compliance with specifications (including specified standards).

1. Structural steel (each type), including certified copies of mill reports covering chemical and physical properties.

2. High-strength bolts (each type), including nuts and washers.

3. Structural steel primer paint.

4. Shrink-resistant grout.

C. Shop Drawings: Submit shop drawings prepared under the supervision of a registered professional engineer, including complete details and schedules for fabrication and assembly of structural steel members, procedures, and diagrams. Show fabrication of all structural steel components.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data. Indicate welds by standard AWS A2.1 and A2.4 symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Indicate type, size and length of bolts, distinguishing between shop and field bolts.

2. Provide setting drawings, templates, and directions, for installation of anchor bolts and other anchorages to be installed as work of other sections.

3. Include embedment drawings.

4. Include welding certificates.

5. Include shop drawings signed and sealed by a qualified professional engineer responsible for their preparation.

6. Qualification Data: For installer, fabricator, Professional Engineer, and testing agency.

7. Mill Test Reports: Signed by manufacturers certifying that the following products comply with requirements:

a. Structural steel, including chemical and physical properties.
b. Bolts, nuts and washers, including mechanical properties and chemical analysis.
c. Direct-tension indicators.
d. Tension-control, high-strength bolt-nut-washer assemblies.
e. Shear stud connectors.
f. Shop primers.
g. Non-shrink grout.

1. Include source quality-control test reports.

D. Test Reports: Submit copies of reports of tests conducted on shop and field bolted and welded connections. Include data on type(s) of tests conducted and test results.

E. Surveys: Submit certified copies of each survey conducted by a registered Professional Engineer or land surveyor, showing elevations and locations of base plates and anchor bolts to receive structural steel, and final elevations and locations for major members. Indicate discrepancies between actual installation and contract documents.

1.06 QUALITY ASSURANCE

A. Codes and Standards: Comply with provisions of following, except as otherwise indicated:

1. AISC "*Code of Standard Practice for Steel Buildings and Bridges*."

a. Paragraph 4.2.1 of the above code is hereby modified by deletion of the following sentence: "This approval constitutes the owner's acceptance of all responsibility for the design adequacy of any connections designed by the fabricator as a part of his preparation of these shop drawings."

2. AISC *"Seismic Provisions for Structural Steel Buildings"*

3. AISC *"Specifications for the Design, Fabrications, and Erection of Structural Steel for Buildings,"* including "Commentary" and Supplements thereto as issued.

4. AISC *"Specifications for Architecturally Exposed Structural Steel."*

5. AISC *"Specifications for Structural Joints using ASTM A325 or A490 Bolts"* approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation.

6. AISC *"Specification for Structural Steel Buildings – Allowable Stress Design and Plastic Design".*

7. AISC *"Specification for the Design of Steel Hollow Structural Sections".*

8. AISC *"Specification for Allowable Stress Design of Single-Angle Members".*

9. American Welding Society (AWS) D1.1 *"Structural Welding Code - Steel."*

10. ASTM A6 "*General Requirements for Delivery of Rolled Steel Plates, Shapes, Sheet Piling, and Bars for Structural Use."*

11. Research Council on Structural Connections' (RCSC) *"Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."*

B. Qualifications for Welding Work: Qualify welding processes and welding operators in accordance

with AWS D1.1, *"Structural Welding Code – Steel."*

1. Provide certification that welders to be employed in work have satisfactorily passed AWS qualification tests.

2. If re-certification of welders is required, retesting will be Contractor's responsibility.

C. Installer's Qualifications: A qualified installer who is familiar with and performs work in accordance with AISC's *"Code of Standard Practice for Steel Buildings and Bridges"* and *"Specification for Structural Steel Buildings-Allowable Stress Design and Plastic Design"* and OSHA's Steel Erection Standard and who has successfully completed projects of similar size and complexity.

D. Fabricator's Qualifications: Engage a firm experienced in fabricating structural steel similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to fabricate structural steel without delaying the Work.

1. Fabricator must participate in the AISC Quality Certification Program and be designated an AISC-Certified Plant as follows:

a. Category: Complex steel building structures.

b. Fabricator shall be registered with and approved by authorities having jurisdiction.

E. Professional Engineer Qualifications: A professional engineer who is legally authorized to practice in the State of New York and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for projects with structural steel framing that are similar to that indicated for this Project in material, design, and extent.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to site at such intervals to insure uninterrupted progress of work.

B. Deliver anchor bolts and anchorage devices, which are to be embedded in cast-in-place concrete or masonry, in ample time to not delay work.

C. Store materials to permit easy access for inspection and identification. Keep steel members off ground, using pallets, platforms, or other supports and spacers. Protect steel members and packaged materials from corrosion or deterioration.

1. Do not store materials on structure in a manner that might cause distortion, damage or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

2. Store fasteners in a protected place. Clean and re-lubricate bolts and nuts that become dry or rusty before use.

1.08 COORDINATION

A. Furnish anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions and directions for installation.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Metal Surfaces, General: For fabrications of work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, rust and scale, seam marks, roller marks, rolled trade names, and roughness. Remove such blemishes by grinding, or by welding and grinding, prior to cleaning, treating, and application of surface finishes.

B. Structural Steel Shapes, Plates, and Bars: ASTM A992/A572-50. minimum F_y = 50 ksi.

C. Channels and Angles, Plates and Bars: ASTM A 36, minimum F_y = 36 ksi.

D. Cold-Formed Steel Tubing / Hollow Structural Sections (HSS): ASTM A500, Grade B; minimum F_y = 46 ksi, structural tubing.

E. Hot-Formed Steel Tubing: ASTM A501.

F. Steel Castings: ASTM A27, Grade 65-35, medium-strength carbon steel.

G. Headed Stud-Type Shear Connectors: ASTM A108, Grade 1015 or 1020, cold finished carbon steel; with dimensions headed-stud type, cold-finished carbon steel; Type B, complying with AWS D1.1 requirements.

H. Anchor Bolts: ASTM F 1554, Grade 36; non-headed type unless otherwise indicated.

1. Configuration: As shown in contract documents.
2. Nuts: ASTM A 563 heavy hex carbon steel.
3. Plate Washers: ASTM A 36 carbon steel.
4. Washers: ASTM F 436 hardened carbon steel.
5. Finish: Plain typical, except hot-dip zinc coating, ASTM A 153, Class C for galvanized members.

I. High-Strength Threaded Fasteners: Heavy hexagon structural bolts, heavy hexagon nuts, and hardened washers, as follows:

1. Quenched and tempered medium-carbon steel bolts, nuts, and washers, complying with ASTM A325, Type 1, heavy hex steel structural bolts; ASTM A 563 heavy hex carbon-steel nuts; and ASTM F 436 hardened carbon-steel washers.

    a. Finish: Plain typical, except hot-dip zinc coating, ASTM A 153, Class C for galvanized members.

2. Quenched and tempered alloy steel bolts, nuts, and washers, complying with ASTM A490.

    a. Direct tension indicator washers may be used at Contractor's option.

J. Electrodes for Welding: Comply with AWS Code requirements, E70XX minimum.

K. Primer:

1. Primer for steel not exposed to weather or exterior conditions: Fast-curing, lead- and chromate-free, universal modified-alkyd primer with good resistance to normal atmospheric corrosion, complying with performance requirements of FS TT-P-664.

2. Primer for exterior exposed steel:

a. Prime coat: Tnemec series 90-97 zinc-rich aromatic urethane primer.
b. Intermediate coat: Tnemec series 66 polyamide epoxy coating.

L. Loose and Hung Lintel Steel Primer Paint: Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer, similar or equal to: 50-330 Poly-Ura-Prime by Tnemec Co., Inc.

2. Lintel angles for exterior veneer, either loose or hung, shall be hot dip galvanized. Final painting shall be after installation, but prior to installation of items in masonry openings.

M. Galvanizing Repair Paint: Comply with Fed. Spec. SSPC-Paint 20.

N. Non-metallic Shrinkage-resistant Grout: Factory-packaged, pre-mixed, non-metallic, non-corrosive, non-staining aggregate grout containing selected silica sands, Portland cement, shrinkage compensating agents, plasticizing and water reducing agents, complying with CE-CRD-C621 and ASTM C1107. Mixed with water to consistency suitable for application and a 30-minute working time.

1. Available Products: Subject to compliance with requirements, products which may be incorporated in the work include, but are not limited to, the following:

a. Euco N.S.; Euclid Chemical Company.
b. Crystex; L & M Construction Chemicals.
c. Masterflow 713; Master Builders.
d. Five Star Grout; U.S. Grout Corporation.
e. Upcon; Upco Chemical Division, USM Corporation.
f. Propak; Protex Industries, Inc.
g. Set Non-Shrink; Set Products, Inc.

O. Combined post-consumer and post-industrial recycled content of all structural steel components must be at least 90%, electric arc furnace steel.

2.02 FABRICATION

A. Shop Fabrication and Assembly: Fabricate and assemble structural assemblies in shop to greatest extent possible. Fabricate items of structural steel in accordance with AISC's *"Code of Standard Practice for Steel Buildings and Bridges"* and AISC's *"Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design."* and as indicated on final shop drawings. Provide camber in structural members where indicated.

1. Properly mark and match-mark materials for field assembly. Fabricate for delivery sequence which will expedite erection and minimize field handling of materials. Identify high-strength structural steel according to ASTM A6 and maintain markings until structural steel has been erected. Mark and match-mark materials for field assembly.

2. Where finishing is required, complete assembly, including welding of units, before start of finishing operations. Provide finish surfaces of members exposed in final structure free of markings, burrs, and other defects.

B. Connections: Weld or bolt shop connections, as indicated. Bolt field connections, except where welded connections or other connections are indicated.

1. Provide high-strength threaded fasteners for principal bolted connections, except where unfinished bolts are indicated.

2. Provide unfinished threaded fasteners for only bolted connections of secondary framing

members to primary members (including purlins, girts, and other framing members taking only nominal stresses) and for temporary bracing to facilitate erection.

C. High-Strength Bolted Construction: Install high-strength threaded fasteners in accordance with RCSC's *"Specifications for Structural Joints using ASTM A325 or A490 Bolts"* for type of bolt and type of joint specified or required.

D. Welded Construction: Comply with AWS D1.1 for welding procedure specifications, tolerances, appearance and quality of welds, and for methods used in correcting welding work.

1. Assemble and weld built-up sections by methods which will produce and maintain true alignment of axes without warp and without exceeding tolerances of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for mill material.

E. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Shop weld shear connectors, spaced as shown, to beams and girders in composite construction. Use automatic end welding of headed stud shear connectors in accordance with AWS D1.1 and manufacturer's written instructions.

F. Bolt Holes: Cut, drill, or punch standard bolt holes perpendicular to metal surfaces.

G. Holes for Other Work: Provide holes as required for securing other work to structural steel framing, and for passage of other work through steel framing members, as shown on final shop drawings. Holes not indicated on structural drawing are not permitted without written approval from the Structural Engineer.

1. Provide threaded nuts welded to framing, and other specialty items as indicated to receive other work.

2. Cut, drill, or punch holes perpendicular to metal surfaces. Do not thermally cut holes or enlarge holes by burning. Drill holes in bearing plates.

3. Base-Plate Holes: Cut, drill or punch holes perpendicular to steel surfaces.

4. Weld threaded nuts to framing and other specialty items indicated to receive other work.

H. Expansion Joints: Provide expansion joints in steel shelf angles when part of structural steel frame; locate at vertical brick expansion joints as indicated on drawings.

I. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1.

J. Steel Wall-Opening Framing: Select true and straight members for fabricating steel wall-opening framing to be attached to structural steel. Straighten as required to provide uniform, square, and true members in completed wall framing.

2.03 SHOP PAINTING

A. General: Shop paint structural steel, except those members or portions of members to be embedded in concrete or mortar. Paint embedded steel which is partially exposed on exposed portions and initial 2" of embedded areas only. Accurately finish ends of columns and other members transmitting bearing loads.

1. Do not paint surfaces which are to be welded or high-strength bolted with friction-type connections.

2. Do not paint surfaces which are scheduled to receive sprayed-on fireproofing.

3. Apply 2 coats of paint to surfaces which are inaccessible after assembly or erection. Change color of second coat to distinguish it from first.

B. Surface Preparation: After inspection and before shipping, clean steel surfaces to be painted. Remove loose rust, loose mill scale, and spatter, slag, or flux deposits. Clean steel in accordance with one of the approved Steel Structures Painting Council (SSPC) methods as follows:

1. SP-1 "Solvent Cleaning."
2. SP-2 "Hand Tool Cleaning."
3. SP-3 "Power Tool Cleaning."
4. SP-5 "White Metal Blast Cleaning."
5. SP-6 "Commercial Blast Cleaning."
6. SP-7 "Brush-Off Blast Cleaning."
7. SP-10 "Near-White Blast Cleaning."

C. Painting: Immediately after surface preparation, apply structural steel primer paint in accordance with manufacturer's written instructions and at a rate recommended by SSPC to provide dry film thickness of not less than 1.5 mils. Use painting Paint System Guide No. 7.00, and priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

1. Apply two coats of shop paint to inaccessible surfaces after assembly or erection. Change color of second coat to distinguish it from first.

D. Painting: Provide a one-coat shop applied paint system complying with Steel Structures Painting Council (SSPC), methods which result in full coverage of joints, corners, edges, and exposed surfaces.

2.04 GALVANIZING

A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A 123.

1. Fill vent holes and grind smooth after galvanizing.

2. Galvanize lintels, shelf angles, beams and all other steel members located in exterior walls supporting and/or in contact with masonry veneer and/or masonry back-up.

2.05 SOURCE QUALITY CONTROL

A. Contractor will engage an independent testing and inspecting agency to perform shop tests and inspections and prepare test reports.

1. Provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections.

B. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

C. Bolted Connections: Shop-bolted connections will be inspected according to RCSC's *"Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."*

D. Welded Connections: In addition to visual inspection required for every weld, shop-welded connections will be tested and inspected according to AWS D1.1 and the following inspection procedures, at testing agency's option:

1. Ultrasonic Inspection: ASTM E 164.
2. Radiographic Inspection: ASTM E 94.

E. In addition to visual inspection, shop-welded shear connectors will be tested and inspected according to requirements in AWS D1.1 for stud welding and as follows:

1. Bend tests will be performed if visual inspections reveal either a less-than- continuous 360-degree flash or welding repairs to any shear connector.

2. Tests will be conducted on additional shear connectors if weld fracture occurs on shear connectors already tested, according to requirements in AWS D1.1.

F. Extent of Inspection and Testing:

1. Bolted Connections:

a. 100 percent of shop-bolted connections shall be visually inspected.

2. Welded Connections:

a. 40 percent of shop-welded connections shall be visually inspected.

b. 100 percent of partial penetration and full penetration type shop welded connections shall be tested by ultrasonic or radiographic inspection.

c. All welds suspected of being defective based on visual inspection shall be tested by ultrasonic or radiographic inspection.

3. Shear Connectors:

a. 100 percent welded shear connectors shall be visually inspected.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify elevations of concrete and masonry bearing surfaces and locations of anchor rods/bolts, bearing plates, and other embedments, with steel erector present, for compliance with requirements.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place, unless otherwise indicated.

3.03 ERECTION

A. Surveys: Employ a registered professional engineer or land surveyor for accurate erection of structural steel. Set structural steel accurately in locations and to elevations indicated and according to AISC's *"Code of Standard Practice for Steel Buildings and Bridges" and "Specification*

for Structural Steel Buildings--Allowable Stress Design and Plastic Design." Check elevations of concrete and masonry bearing surfaces, and locations of anchor bolts and similar devices, before erection work proceeds, and report discrepancies to Architect. Do not proceed with erection until corrections have been made, or until compensating adjustments to structural steel work have been agreed upon with Architect.

B. Temporary Shoring and Bracing: Provide temporary shoring and bracing members with connections of sufficient strength to bear imposed loads, as required. Remove temporary members and connections when permanent members are in place and final connections are made. Provide temporary guy lines to achieve proper alignment of structures as erection proceeds.

C. Temporary Planking: Provide temporary planking and working platforms as necessary to effectively complete work.

D. Setting Bases and Bearing Plates: Clean concrete and masonry bearing surfaces of bond-reducing materials and roughen to improve bond to surfaces, prior to setting base, bearing and leveling plates. Clean bottom surface of base, bearing and leveling plates.

1. Set loose and attached base plates and bearing plates for structural members on wedges, shims, setting/leveling nuts or other adjusting devices as required and adjust column base leveling nuts as required.

a. Snug-tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims, but if protruding, cut off flush with edge of base or bearing plate prior to packing with grout.

b. Pack grout solidly between bearing surfaces and base or bearing plates to ensure that no voids remain. Neatly finish exposed surfaces, protect installed materials and grout, and allow to cure.

c. For proprietary grout materials, comply with manufacturer's written instructions for shrinkage-resistant grouts.

E. Field Assembly: Set structural frames accurately to lines and elevations indicated. Align and adjust various members forming part of complete frame or structure before permanently fastening. Clean bearing surfaces and other surfaces which will be in permanent contact before assembly. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure within specified AISC tolerances.

2. 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 time of erection and mean temperature at which structure will be when completed and in service.

3. Splice members only where indicated and accepted on shop drawings and as required to meet OSHA's Steel Erection Standards.

4. Do not use thermal cutting during erection.

5. Maintain erection tolerances of structural steel within AISC's *"Code of Standard Practice for Steel Buildings and Bridges."*

F. Erection Bolts: On exposed welded construction, remove erection bolts, fill holes with plug welds, and grind smooth at exposed surfaces.

1. Comply with AISC Specifications for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.

    a. Do not enlarge unfair holes in members by burning or by use of drift pins, except in secondary bracing members. Ream holes that must be enlarged to admit bolts.

G. Gas Cutting: Do not use gas cutting torches in field for correcting fabrication errors in primary structural framing. Cutting will be permitted only on secondary members which are not under stress, as acceptable to Architect. Finish gas-cut sections equal to a sheared appearance when permitted.

H. Touch-up Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint. Apply paint to exposed areas using same material as used for shop painting.

    1. Apply by brush or spray to provide minimum dry film thickness of 1.5 mils.

I. Touch-up Painting: Cleaning and touch-up painting of field welds, bolted connections, and abraded areas of shop paint on structural steel is included in Division 9 under painting work.

3.04 FIELD CONNECTIONS

A. High Strength Bolts: Install high-strength bolts according to RCSC's *"Specification for Structural Joints Using ASTM A 325 or A 490 Bolts"* for type of bolt and type of joint specified.
    1. Joint Type: Snug tightened.

B. Weld Connections: Comply with AWS D1.1 for welding procedure specifications, tolerances, appearance, and quality of welds and for methods used in correcting welding work.

    1. Comply with AISC's *"Code of Standard Practice for Steel Buildings and Bridges"* and *"Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design"* for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.

    2. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances of AISC's *"Code of Standard Practice for Steel Buildings and Bridges"* for mill material.

3.05 FIELD QUALITY CONTROL:

A. The Contractor shall make arrangement for and the Owner shall pay for an independent testing and inspection agency to inspect and test high-strength bolted connections and welded connections, to perform tests and prepare test reports, in conformance with all Special Inspection requirements. The Contractor will be responsible for all costs associated with failed tests.

    1. Testing agency shall conduct and interpret tests, and state in each report whether test specimens comply with requirements, and specifically state any deviations therefrom.

    2. Provide access for testing agency to places where structural steel work is being fabricated or produced so that required inspection and testing can be accomplished.

    3. Testing agency may inspect structural steel at plant before shipment; however, Architect reserves right, at any time before final acceptance, to reject material not complying with specified requirements.

    4. Correct deficiencies in structural steel work which inspections and laboratory test reports have indicated to be not in compliance with requirements. Perform additional tests, at Contractor's

expense, as may be necessary to reconfirm any non-compliance of original work, and as may be necessary to show compliance of corrected work.

B. Shop Bolted Connections: Inspect or test in accordance with AISC specifications.

C. Shop Welding: Inspect and test during fabrication of structural steel assemblies, as follows:

1. Certify welders and conduct inspections and tests as required. Record types and locations of defects found in work. Record work required and performed to correct deficiencies.

2. Perform visual inspection of all welds.

3. Perform tests of welds as follows. Inspection procedures listed are to be used at Contractor's option:

a. Liquid Penetrant Inspection: ASTM E165.

b. Magnetic Particle Inspection: ASTM E709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration not acceptable.

c. Radiographic Inspection: ASTM E94 and ASTM E142; minimum quality level "2-2T."

d. Ultrasonic Inspection: ASTM E164.

D. Field Bolted Connections: Inspect in accordance with RCSC's *"Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."*

E. Field Welding: Field welds will be visually inspected according to AWS D1.1, ***and in accordance with Chapter 17 requirements of the NYS Building Code***. Inspect and test during erection of structural steel as follows:

1. Verify certification of welders and conduct inspections and tests as required. Record types and locations of defects found in work. Record work required and performed to correct deficiencies.

2. Perform visual inspection of all welds.

3. The testing agency shall perform tests of welds as follows:

a. Liquid Penetrant Inspection: ASTM E165.

b. Magnetic Particle Inspection: ASTM E709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration not acceptable.

c. Radiographic Inspection: ASTM E94 and ASTM E142; minimum quality level "2-2T."

d. Ultrasonic Inspection: ASTM E164.

4. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

5. Extent of Inspection and Testing:

1. Bolted Connections:

a. 100% of field-bolted connections shall be visually inspected.

2. Welded Connections:

a. 100% of field-welded connections shall be visually inspected.

b. 100% of partial penetration and full penetration type field-welded connections shall be tested by ultrasonic or radiographic inspection.

c. 100% of any weld suspected of being defective based on visual inspection shall be tested by ultrasonic or radiographic inspection.

6. Shear Connectors:

a. 100% of field-welded shear connectors shall be visually inspected.

b. Any shear connector suspected of being defective based on visual inspection shall be tested by bend test.

c. Additional 10% minimum of total number of shear connectors shall be tested by bend test if weld fracture occurs on shear connectors already tested.

F. Installation of hangers and supports on structural components by Mechanical Contractor and/or Plumbing Contractor.

1. Structural steel (wide flange and standard beams, channels):

a. Mechanical Contractor and/or Plumbing Contractor to install individual supports/hangers and trapezes off center of structural steel component.

2. Light gauge metal trusses:

a. Mechanical Contractor and/or Plumbing Contractor to install individual support/hangers and trapezes only at panel points. The Mechanical Contractor and/or Plumbing Contractor shall reimburse the General Contractor (who is supplying the trusses) to provide reinforcing per manufacturers recommendations. ***If work is in an existing structure, no panel point deviation will be permitted and the Mechanical Contractor provides hanging/support details showing reinforcement of existing structural components designed, signed and sealed by an Engineer licensed in the State of New York.***

3.06 REPAIRS AND PROTECTION:

A. Repair damaged galvanized coatings on galvanized items with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

B. Touchup Painting: After installation, promptly clean, prepare, and prime or reprime field connections, rust spots, and abraded surfaces of prime-painted structural steel and accessories, bearing plates, and abutting structural steel.

1. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.

2. Apply a compatible primer of same type as shop primer used on adjacent surfaces.

END OF SECTION

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

SECTION 079200 – JOINT SEALANTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this section.

B. Related Sections include the following:

1. Section 042000 – Unit Masonry
2. Various Division 07 Roofing Specifications
3. Section 084113 – Aluminum Entrances and Storefronts
4. Section 084413 – Glazed Aluminum Curtain Walls
5. Section 085113 – Aluminum Windows
6. Section 093013 – Ceramic Tile

1.02 WORK INCLUDED

A. The work covered by this section of the specifications consists of furnishing all plant, labor, equipment, appliances, and materials and performing all operations in connection with the application of caulking complete, in strict accordance with this section of the specifications and the applicable drawings, and subject to the terms and conditions of the contract.

1. It is the intent of the caulking work under this Section to provide waterproof seals at all joints where shown on drawings.

B. Joint sealants to be as per the exterior and interior joint sealant schedules at the end of this section.

1.03 REFERENCE STANDARDS

A. ASTM International (ASTM):

1. ASTM C 661 - Standard Test Method for Indentation Hardness of Elastomeric Type Sealants by Means of a Durometer
2. ASTM C 794 - Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants
3. ASTM C834 - Specification for Latex Sealants
4. ASTM C 920 - Specification for Elastomeric Joint Sealants
5. ASTM C 1087 - Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems
6. ASTM C 1193 - Guide for Use of Joint Sealants
7. ASTM C 1248 - Test Method for Staining of Porous Substrate by Joint Sealants
8. ASTM C 1311 - Specification for Solvent Release Sealants
9. ASTM C 1330 - Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants
10. ASTM D 412 - Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension
11. ASTM D 624 - Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers
12. ASTM D 2240 - Test Method for Rubber Property - Durometer Hardness
13. ASTM E 283 - Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
14. ASTM E 331 - Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference

B. NSF International (NSF):

1. Standard 51: Food Equipment Materials

C. Sealant, Waterproofing, and Restoration Institute (SWRI):

1. SWRI Validation Program

1.04 SUBMISSIONS

A. Submissions shall be in accordance with Section 013300 - Submittal Procedures, and as modified below.

B. Manufacturer's Data, Sealants and Caulking:

1. Submit three copies of manufacturer's specifications, recommendations, and installation instructions for each type of sealant, caulking compound, and associated miscellaneous material required. Include manufacturer's published data, or letter of certification, or certified test laboratory report indicating that each material complies with the requirements and is intended generally for the applications shown.

C. Samples, Sealants and Caulking:

1. Submit three 12" long samples of manufacturer's standard colors for each type of sealant or caulking compound for selection by Architect.

a. Install sample between two strips of material similar to or representative of typical surfaces where sealant or compound will be used, held apart to represent typical joint widths. Samples will be reviewed by Architect for color and texture only. Compliance with all other requirements is the exclusive responsibility of the Contractor.

D. Guarantee, Sealants:

1. Submit three copies of written guarantee agreeing to repair or replace sealants which fail to perform as air tight and watertight joints; or fail in joint adhesion, cohesion, abrasion resistance, weather resistance, extrusion resistance, migration resistance, stain resistance, or general durability, or appear to deteriorate in any other manner not clearly specified as in inherent quality of the material by submitted manufacturer's data. Provide guarantee for a period of two years, signed by the installer and Contractor.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Experienced Installer equipped and trained for application of joint sealants required for this Project with record of successful completion of projects of similar scope.

B. Single Source Responsibility: Provide glazing sealants by a single manufacturer responsible for testing of Project substrates to verify compatibility and adhesion of joint sealants.

C. Preconstruction Manufacturer Laboratory Compatibility, Staining, and Adhesion Testing: Submit [four] samples of each material that will be in contact with or affect joint sealants. Test sealants with substrate materials using ASTM C794 or manufacturer's standard test methods to determine requirements for joint preparation, including cleaning and priming. Test sealants with related materials to verify compatibility.

D. Preconstruction Field-Adhesion Testing: Prior to installing joint sealants, field test adhesion to joint substrates using ASTM C1193 Method A or method recommended by manufacturer. Verify

adhesion is adequate. Modify joint preparation recommendations for failed joints and re-test. Submit written report to Architect.

E. Mockups: Provide joint sealant application within mockups required in other sections identical to specified joint sealants and installation methods.

1.06 WARRANTY

A. Special Installer's Warranty: Original statement on Installer's letterhead in which Installer agrees to repair or replace joint sealants that demonstrate deterioration or failure within warranty period specified.

1. Warranty Period: Two years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint sealant manufacturer agrees to furnish joint sealants to repair or replace those that demonstrate deterioration or failure under normal use within warranty period specified.

1. Warranty Period for Silicone Sealants: 20 years date of Substantial Completion.

C. Warranty Conditions: Special warranties exclude deterioration or failure of joint sealants in normal use due to structural movement resulting in stresses on joint sealants exceeding sealant manufacturer's written specifications, joint substrate deterioration, mechanical damage, or normal accumulation of dirt or other contaminants.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Basis-of-Design Product: Provide joint sealant products manufactured by The Dow Chemical Company, Midland MI; (877) SEALANT ((877) 732-5268); email: construction@dow.com; dow.com/construction; or Architect approved equivalent.

2.02 MATERIALS, GENERAL

A. VOC Content for Interior Applications: Provide sealants and sealant primers complying with the following VOC content limits per 40 CFR 59, Subpart D (EPA Method 24).

1. Architectural Sealants: 250 g/L.
2. Sealant Primers for Nonporous Substrates: 250 g/L.
3. Sealant Primers for Porous Substrates: 775 g/L.

B. Low-Emitting Sealants for Interior Applications: Provide sealants and sealant primers complying with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

C. Compatibility: Provide joint sealants and accessory materials that are compatible with one another, with joint substrates, and with materials in close proximity under use conditions, as demonstrated by sealant manufacturer by testing and related experience.

D. Joint Sealant Standard: Comply with ASTM C 920 and other specified requirements for each liquid-applied joint sealant.

E. Stain Test Characteristics: Where sealants are required to be nonstaining, provide sealants tested

per ASTM C 1248 as non-staining on porous joint substrates indicated for Project.

F. Food Contact Suitability: Where sealants are required to be suitable for contact with food provide sealants complying with 21 CFR 177.2600.

2.03 LIQUID JOINT SEALANTS

A. Joint Sealant #1 – Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 100/50, for Use T, NT; SWRI validation.

1. Basis of Design Product: DOWSIL™ 790 Silicone Building Sealant.
2. Hardness, ASTM C 661: 15 durometer Shore A.
3. Volatile Organic Compound (VOC) Content: 26 g/L maximum.
4. Staining, ASTM C 1248: None on concrete, granite, limestone, and brick.
5. Color: As selected by Architect from manufacturer's full line of not less than 10 colors.

B. Joint Sealant #2 – Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, for Use NT; SWRI validation.

1. Basis of Design Product: DOWSIL™ 756 SMS Building Sealant.
2. Hardness, ASTM C 661: 35 durometer Shore A.
3. Volatile Organic Compound (VOC) Content: 60 g/L maximum.
4. Staining, ASTM C 1248: None on white marble.
5. Color: As selected by Architect from manufacturer's full line of not less than 8 colors.

C. Joint Sealant #3 – Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, Use NT, G, M and A; SWRI validation.

1. Basis of Design Product: DOWSIL™ 791 Silicone Weatherproofing Sealant.
2. Hardness, ASTM C 661: 34 durometer Shore A.
3. Volatile Organic Compound (VOC) Content: 30 g/L maximum.
4. Staining, ASTM C 1248: None on concrete, granite, limestone, and brick.
5. Color: As selected by Architect from manufacturer's full line of not less than 6 colors.

D. Joint Sealant #4 – Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, for Use NT, G, A, and O; SWRI validation.

1. Basis of Design Product: DOWSIL™ 795 Silicone Building Sealant.
2. Hardness, ASTM C 661: 35 - 45 durometer Shore A.
3. Volatile Organic Compound (VOC) Content: 32 g/L maximum.
4. Staining, ASTM C 1248: None on concrete, granite, limestone, and brick.
5. Color: As selected by Architect from manufacturer's full line of not less than 10 colors.

E. Joint Sealant #5 – Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C920, Type S, Grade NS, Class 50, for Use NT; SWRI validation.

1. Basis of Design Product: DOWSIL™ 995 Silicone Structural Sealant.
2. Hardness, ASTM D 2240: 35 - 45 durometer Shore A.
3. Volatile Organic Compound (VOC) Content: 34 g/L maximum.
4. Ultimate Tensile, ASTM C 1135: 160 psi (1.1 MPa), at 21 day cure (TA Joint).
5. Color: As selected by Architect from manufacturer's full line of not less than 3 colors.

F. Joint Sealant #6 – Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT; SWRI validation.

1. Basis of Design Product: DOWSIL™ 758 Silicone Weather Barrier Sealant.

2. Hardness, ASTM D 2240: 45 durometer Shore A.
3. Volatile Organic Compound (VOC) Content: 61 g/L maximum.
4. Color: White.

G. Joint Sealant #7 – Single-Component, Nonsag, Acid-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT.

1. Basis of Design Product: DOWSIL™ 999A Silicone Building & Glazing Sealant.
2. Hardness, ASTM D 2240: 25 durometer Shore A minimum.
3. Volatile Organic Compound (VOC) Content: 36 g/L maximum.
4. Ultimate Tensile, ASTM D 412: 325 psi (1.2 MPA) at 21 day cure (Dumbbell).
5. Color: As selected by Architect from manufacturer's full line of not less than 6 colors.

H. Joint Sealant #8 – Mildew-Resistant, Single-Component, Nonsag, Acid-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT.

1. Basis of Design Product: DOWSIL™ 786 Silicone Sealant.
2. Hardness, ASTM D 2240: 25 durometer Shore A.
3. Volatile Organic Compound (VOC) Content: 36 g/L maximum.
4. NSF Standard 51 and FDA Regulation No. 21 CFR 177.2600 compliant.
5. Color: As selected by Architect from manufacturer's standard colors.

I. Latex Joint Sealant: Siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

J. Butyl-Rubber-Based Joint Sealant: ASTM C 1311.

2.04 PRE-FORM JOINT SEALANTS

A. Preformed Silicone Elastomer Extrusion: Highly flexible low-modulus flashing and transition material for bonding to substrates with silicone sealant. SWRI validation.

1. Basis of Design Product: DOWSIL™ 123 Silicone Seal.
2. Surface: Smooth matte, Textured or Grooved to facilitate bending.
3. Bonding Sealant: Manufacturer's recommended neutral-curing silicone.
4. Hardness, ASTM D 2240: 25 durometer Shore A, minimum.
5. Color: As selected by Architect from manufacturer's full line.

B. Preformed Silicone Elastomer Custom Two- and Three- Dimension Extrusion: Highly flexible flashing and transition material for bonding to substrates with silicone sealant.

1. Basis of Design Product: DOWSIL™ 123 Silicone Seal Custom Design H. C.
2. Formulation: General Purpose or High Tear.
3. Shape: Multi-dimensional as indicated on drawings and approved shop drawings and as required to fit and functionally seal specific application and prevent air and water penetration
4. Bonding Sealant: Manufacturer's recommended neutral-curing silicone.
5. Color: As selected by Architect from manufacturer's full line.

2.05 WEATHER BARRIER TRANSITIONS

A. Silicone Elastomer Weather Barrier Transition: Highly flexible clear flashing and transition strip and pre-molded corners for bonding with silicone sealant to weather barrier substrates and to adjacent curtain wall, storefront, and window frames and other transition substrates.

1. Basis of Design Product: DOWSIL™ 123 Silicone Transition Strip (STS).
2. Hardness, ASTM D 2240: 50 - 60 durometer Shore A.
3. Color: Translucent

4. Air Infiltration, ASTM E 283: Maximum 0.025 cfm/sq. ft. (0.127 L/s per sq. m) at 6.24 lbf/sq. ft. (300 Pa).
5. Water Penetration under Static Pressure, ASTM E 331: None at 15 lbf/sq. ft. (720 Pa)
6. Movement Capability: Not less than plus 200, minus 75 percent.
7. Tensile Strength, ASTM D 412: Not less than 800 psi (5.5 MPa).
8. Tear Strength, ASTM D 624: Not less than 200 psi (16 kN/m).
9. Elongation, ASTM D 412: Not less than 400 percent.
10. Bonding Sealant: Manufacturer's recommended neutral-curing silicone.

2.06 ACCESSORIES

A. Joint Substrate Primers: Substrate primer recommended by sealant manufacturer for application.

B. Premolded Joints for Floors and Paving:

1. Rescor Expansion Joint (W. R. Meadows) or approved equivalent, 1/2-inch thick or as shown; leave 1/2-inch clear space at top to receive sealant.

C. Cylindrical Sealant Backing: ASTM C 1330, Type B non-absorbent, bi-cellular material with surface skin, or Type O open-cell polyurethane, as recommended by sealant manufacturer for application.

1. Plastic Foam Joint Fillers: Preformed, compressible, resilient, non-waxing, non-extruding strips of plastic foam of material indicated below, and of size, shape, and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

a. Either flexible, open-cell polyurethane foam or non-gassing, closed-cell polyethylene foam, unless otherwise indicated, subject to approval of sealant manufacturer.

2. Elastomeric Tubing Joint Fillers: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, non-absorbent to water and gas, capable of remaining resilient at temperatures down to -26°F (-15°C). Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth and otherwise contribute to optimum sealant performance.

D. Bond Breaker Tape: Polymer tape compatible with joint sealant materials and recommended by sealant manufacturer for preventing bond between sealant and joint filler or other materials at back of joint.

E. Primer: As recommended by joint sealer manufacturer where required for adhesion of sealant to joint substrates indicated.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine joint profiles and surfaces to determine if work is ready to receive joint sealants. Verify joint dimensions are adequate for development of sealant movement capability. Proceed with joint sealant work once conditions meet sealant manufacturer's recommendations.

3.02 PREPARATION

A. Joint Surface Cleaning: Clean joints prior to installing joint sealants using materials and methods recommended by sealant manufacturer.

1. Remove laitance, form-release agents, dust, and other contaminants.
2. Clean nonporous and porous surfaces utilizing chemical cleaners acceptable to sealant manufacturer.

3.03 SEALANT APPLICATION

A. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

B. Masking: Mask adjacent surfaces to prevent staining or damage by contact with sealant or primer.

C. Joint Priming: Prime joint substrates when recommended by sealant manufacturer or when indicated by preconstruction testing or experience. Apply recommended primer using sealant manufacturer's recommended application techniques.

D. Joint Backing: Select joint backing materials recommended by sealant manufacturer to be compatible with sealant material. Install backing material at depth required to produce profile of joint sealant allowing optimal sealant movement.

   1. Install bond breaker tape over substrates when sealant backings are not used.

E. Liquid Sealant Application: Install sealants using methods recommended by sealant manufacturer, in depths recommended for application. Apply in continuous operation from bottom to top of joint vertically and horizontally in a single direction. Apply using adequate pressure to fill and seal joint width.

   1. Tool sealants immediately with appropriately shaped tool to force sealants against joint backing and joint substrates, eliminating voids and ensuring full contact.

   2. Using tooling agents approved by sealant manufacturer for application.

F. Cleaning: Remove excess sealant using materials and methods approved by sealant manufacturer that will not damage joint substrate materials.

   1. Remove masking tape immediately after tooling joint without disturbing seal.

   2. Remove excess sealant from surfaces while still uncured.

3.04 PREFORMED JOINT SEALANT APPLICATION

A. Preparation: Prepare surfaces in accordance with sealant manufacturer's written instructions. Perform field adhesion testing to determine need for application of primer. Clean surfaces to dust free, and perform solvent wipe where recommended. Mask edges of surface to be treated.

B. Application: Apply bead of recommended liquid joint sealant to each side of joint in bead size recommended by manufacturer. Press extrusion into sealant using roller to ensure uniform and complete contact. Lap vertical and horizontal joints as indicated in manufacturer's instructions. Trim preformed joint sealant. Remove masking tape and excess sealant.

3.05 WEATHER BARRIER TRANSITION APPLICATION

A. Preparation: Prepare field of weather barrier surface and surface of adjacent substrate in accordance with sealant manufacturer's written instructions. Perform field adhesion testing to determine need for application of primer. Clean surfaces to dust free, and perform solvent wipe where recommended.

B. Application: Apply bead of recommended liquid joint sealant to each side of joint in bead size recommended by manufacturer. Press transition extrusion into sealant using roller to ensure uniform and complete contact. Lap vertical and horizontal joints as indicated in manufacturer's instructions. Trim transition material. Remove excess sealant.

3.06 FIELD QUALITY CONTROL

A. Field-Adhesion Testing: Perform adhesion tests in accordance with manufacturer's instructions and with ASTM C 1193, Method A.

1. Perform 5 tests for the first 1000 feet of joint length for each kind of sealant and joint substrate, and one test for each 1000 feet of joint length thereafter or 1 test per each floor per building elevation, minimum.

2. For sealant applied between dissimilar materials, test both sides of joint.

B. Remove sealants failing adhesion test, clean substrates, reapply sealants, and re-test. Test adjacent sealants to failed sealants.

C. Submit report of field adhesion testing to Architect indicating tests, locations, dates, results, and remedial actions taken.

3.07 EXTERIOR JOINT-SEALANT SCHEDULE

A. Exterior construction joints in cast-in-place concrete.

1. Joint Sealant #1: Single-component neutral-curing non-staining silicone sealant.
2. Color: As selected by Architect from manufacturer's full range.

B. Exterior movement joints in concrete unit masonry.

1. Joint Sealant #4: Single-component neutral-curing non-staining silicone sealant.
2. Color: As selected by Architect from manufacturer's full range.

C. Exterior movement joints in brick masonry.

1. Joint Sealant #4: Single-component neutral-curing non-staining silicone sealant.
2. Color: As selected by Architect from manufacturer's full range.

D. Exterior movement joints in stone masonry.

1. Joint Sealant #2: Single-component neutral-curing non-staining silicone sealant.
2. Color: As selected by Architect from manufacturer's full range.

E. Exterior joints within exterior insulation finish systems (EIFS).

1. Joint Sealant #1: Single-component neutral-curing non-staining silicone sealant.
2. Color: As selected by Architect from manufacturer's full range.

F. Exterior exposed joints in metal panel cladding systems.

1. Joint Sealant #2: Single-component neutral-curing non-staining silicone sealant.
2. Color: As selected by Architect from manufacturer's full range.

G. Exterior concealed watertight joints in cladding systems.

1. Joint Sealant #3: Single-component neutral-curing silicone sealant.
2. Color: As selected by Architect from manufacturer's full range.

H. Exterior joints between different materials listed above.

1. Joint Sealant #4: Single-component neutral-curing non-staining silicone sealant.
2. Color: As selected by Architect from manufacturer's full range.
3. Multiple colors required to match several conditions.

I. Exterior perimeter joints at frames of doors, windows, storefront frames, curtain wall frames, and louvers.

1. Joint Sealant #4: Single-component neutral-curing non-staining silicone sealant.
2. Color: As selected by Architect from manufacturer's full range.
3. Multiple colors required to match several conditions.

J. Exterior joints within aluminum storefront framing, curtain walls, and window systems.

1. Joint Sealant #4: Single-component neutral-curing non-staining silicone sealant.
2. Color: As selected by Architect from manufacturer's full range.

K. Exterior joints within structural glazing and protective glass sealant.

1. Joint Sealant #5: Single-component, nonsag, neutral-curing silicone sealant.

L. All other exterior non-traffic joints.

1. Joint Sealant #1: Single-component neutral-curing silicone sealant.
2. Color: As selected by Architect from manufacturer's full range.

M. Exterior horizontal traffic and traffic isolation joints.

1. Joint Sealant #1: Single-component pourable silicone sealant.
2. Color: As selected by Architect from manufacturer's full range.

3.08 INTERIOR JOINT-SEALANT SCHEDULE

A. Interior movement joints in exterior concrete and unit masonry.

1. Joint Sealant #4: Single-component neutral-curing silicone sealant.
2. Color: As selected by Architect from manufacturer's full range.

B. Interior perimeter joints of exterior frames.

1. Joint Sealant #3: Single-component neutral-curing silicone sealant.
2. Color: As selected by Architect from manufacturer's full range.

C. Interior movement joints in interior unit masonry.

1. Joint Sealant #4: Single-component neutral-curing silicone sealant.
2. Color: As selected by Architect from manufacturer's full range.

D. Interior perimeter joints of interior frames.

1. Joint Sealant #3: Single-component neutral-curing silicone sealant.
2. Color: As selected by Architect from manufacturer's full range.

E. Interior sanitary joints between plumbing fixtures and food preparation fixtures and casework and adjacent walls, floors, and counters.

1. Joint Sealant #8: Mildew-Resistant, Single-Component, nonsag, acid-curing silicone joint sealant.
2. Color: As selected by Architect from manufacturer's full range to match multiple conditions.

F. Interior traffic joints in floor and between floor and wall construction.

1. Joint Sealant #1: Single-component, nonsag, neutral-curing silicone joint sealant.
2. Color: As selected by Architect from manufacturer's full range.

G. Interior non-moving joints between interior painted surfaces and adjacent materials.

1. Joint Sealant: Siliconized acrylic latex.
2. Color: White; paintable.

H. Interior concealed sealants at thresholds and sills.

1. Joint Sealant: Butyl-rubber-based joint sealant.

I. Interior exposed and non-exposed acoustical applications.

1. Joint Sealant: Acoustical sealant specified in Section 079219 Acoustical Joint Sealants.

END OF SECTION

DIVISION 09 – FINISHES

SECTION 099000 – PAINTING

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of Contract, including General Supplementary Conditions and Division 01 Specification Sections, apply to this section.

1.02 DESCRIPTION

A. Work included: Paint and finish all new and existing interior and exterior wall surfaces related with proposed work area and all new and existing steel structures specified on drawings.

1. Examine the specifications and drawings of all trades and thoroughly be familiar with all provisions regarding painted work included therein. Surfaces shown, noted, scheduled, or specified to receive painters' finish as part of the work of this section.

2. The painting subcontractor shall furnish, maintain, and remove when no longer required, all scaffolding, staging, and riggings required for this work.

1.03 RELATED WORK DESCRIBED ELSEWHERE

A. Shop Coats: Refer to specific project manual sections for shop coats on items such as structural steel, miscellaneous metal, custom hollow metal work, and similar items.

B. Pre-Finished Items: Refer to specific project manual sections for factory-finished, or installer finishes.

1.04 WORK NOT INCLUDED

A. Do not include painting, which is specified under other sections.

B. Unless otherwise indicated, painting is not required on surfaces in concealed areas and inaccessible areas such as furred spaces, foundation spaces, utility tunnels, pipe spaces, and duct shafts.

C. Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze, and similar finished materials will not require painting under this section except as may be specified herein.

D. Do not paint any moving parts of operating units, mechanical or electrical parts such as valve operators, linkages, sinkages, sensing devices, and motor shafts, unless otherwise indicated.

E. Do not paint over any required labels or equipment identification, performance rating, name or nomenclature plates.

1.05 DEFINITIONS

A. The term "paint," as used herein, means all coating systems materials including primers, emulsions, epoxy, enamels, stains, sealers, fillers, and other applied materials where used as prime, intermediate, or finish coats.

1.06 QUALITY ASSURANCE

A. Standards: Comply with standards specified in the section and as listed in Section 014219.

B. Qualifications of Manufacturers: Products used in the work of this section shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of successful production acceptable to the Architect.

C. Qualifications of Applicators:

1. Provide at least one person who shall be present at all times during execution of the work of this section, who shall be thoroughly familiar with the specified requirements and the materials and methods needed for their execution, and who shall direct all work performed under this section.
2. Provide adequate numbers of workman skilled in the necessary crafts and properly informed of the methods and materials to be used.
3. Minimum three years of experience in applying commercial coating systems similar to the materials specified.

D. Paint Coordination:

1. Provide finish coats, which are compatible with the prime coats used.
2. Review other sections of this specification as required, verifying the prime coats to be used and assuring compatibility of the total coating system for the various substrata.
3. Upon request, furnish information on the characteristics of the specific finish materials to ensure that compatible prime coats are used.
4. Provide barrier coats over non-compatible primers, or remove the primer and re-prime as require
5. Notify the Architect in writing of anticipated problems in using the specified coating systems over prime coating supplied under other sections.

E. Field Samples:

1. Before proceeding with paint application, finish one complete surface of each color scheme required, clearly indicating selected colors, finish texture, materials, and workmanship.
2. Sample areas, when accepted by the Architect, shall serve as a minimum standard fro work throughout the entire project.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the job site in the manufacturer’s original unopened packages and containers bearing manufacturer’s name and label and the following information:

1. Product name or title.
2. Product description (generic classification or binder type).
3. Federal Specification Number, if applicable.
4. Manufacturer’s stock number and date of manufacture.
5. Contents by volume, for pigment and vehicle constituents.
6. Thinning instructions.
7. Application and instructions.
8. Color name and number.

B. Storage:

1. Provide proper storage to prevent damage to, and deterioration of, paint materials.

2. Store all materials in a single location approved by the Architect. Storage area is to be kept neat and clean. Any damage to the storage area or surrounding occurring during its use for storage shall be repaired to its original state (Architect's acceptance required). Remove all soiled or used rags, waste, and trash from the building every night and take every precaution to avoid damage of fire.

C. Protection:

1. Use all means necessary to protect the materials of this section before, during, and after installation and to protect the work and materials of other trades.

D. Replacement:

1. In the event of damage, immediately make all the repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

1.08 JOB CONDITIONS

A. Provide continuous heating and ventilation as required to maintain surface and ambient temperatures above 50ºF for at least 24 hours before, during and for at least 48 hours after paint application.

B. Do not apply paint in snow, rain, fog, or mist, or when relative humidity exceeds paint manufacturer's recommended limits. Avoid painting surfaces while they are exposed to hot sun.

C. Lighting: Provide minimum 80 foot candle light level at mid-height of substrate surface.

1.09 EXTRA STOCK

A. Amount: Upon completion of the work of this section, deliver to the Owner an extra stock equaling 10% of each color, type, and gloss of paint used on the work.

B. Packaging: Tightly seal each container and clearly label with the contents and location used.

1.10 SUBMISSIONS

A. General: Comply with requirements of Section 013300 – Submittal Procedures and as modified bellow.

B. Product Data:

1. Submit to the Architect a complete schedule of paint materials proposed to be furnished and installed under this section, including name of manufacturer and type of paint.

2. Manufacturer's specifications and other data required to demonstrate compliance with the specified requirements.

3. For information only, submit two copies of manufacturer's specifications, including paint analysis and application instructions for each material. Indicate by transmittal that a copy of each manufacturer's instructions has been distributed to the applicator.

C. Samples: Submit three (3) 8 ½" x 11" paint strike offs of each paint color and paint type specified for color match verification. Identify each sample as to finish, formula, color name, and color number.

D. Stain Samples: Submit three (3) 8 ½" x 10" wood samples of stain matching specified wood species and color for architect's approval.

E. Certification by the manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOC's).

PART 2 – PRODUCTS

2.01 PAINT MATERIALS

A. Design is based on the use of paint products manufactured by Benjamin Moore and the materials of that manufacturer are named in the painting schedule. Equal products of other manufacturers approved in advance by the Architect may be utilized.

B. General: Provide the best quality grade of the various types of coatings as regularly manufactured by paint materials manufacturers approved by the Architect. Materials not displaying the manufacturer's identification as a standard best-grade product will not be acceptable.

C. Durability: Provide paints of durable and washable quality. Do not use paint materials, which will not withstand normal washing, as required to remove pencil marks, ink, ordinary soil, and similar material without showing discoloration, loss of gloss, staining or other damage.

D. Colors and Glosses: Provide colors and glosses to match existing from manufacturer's full range of colors for each product indicated.

E. Undercoats and Thinners: Provide undercoat paint produced by the same manufacturer as the finish coat. Use only the thinners recommended by the paint manufacturer, and use only the recommended limits. Insofar as practicable, use undercoat, finish coat, and thinner material as parts of a unified system of paint finish.

F. Standards: Provide paint materials which meet or exceed the standards listed for each application in the Painting Schedule in Part 3 of this section.

1. All paint to be V.O.C. compliant.
2. OTC as used in this Section refers to the Ozone Transmission Commission. OTC II has established the following VOC levels for Maryland, New York and Connecticut, United States. Products shall meet the following OTC II limits for VOC's when jobs are in these states.

    a. Interior flat paints: 50 grams per liter or less, per gallon.
    b. Interior enamels: 100 grams per liter or less, per gallon.
    c. Interior stains: 250 grams per liter or less, per gallon.
    d. Interior primers: 100 grams per liter or less, per gallon.
    e. Rust preventive coatings: 250 grams per liter or less, per gallon.
    f. Dry fog coatings: 150 grams per liter or less, per gallon.
    g. Floor coatings: 100 grams per liter or less, per gallon.
    h. Flats50 g/L
    i. Non-Flats100 g/L
    j. Primers Sealers and Undercoats100 g/L
    k. Floor Coatings100 g/L
    l. Concrete/masonry Sealer100 g/L
    m. Rust Preventative Coatings250 g/L
    n. Industrial Maintenance Coatings250 g/L
    o. Stains, Exterior250 g/L
    p. Wood Coating/Varnish/stain275 g/L
    q. Zinc Rich Primers340

G. Application Equipment: For application of the approved paint, use only such equipment as is recommended for application of the particular paint by the manufacturer of the particular paint and as approved by the Architect.

H. Other Materials: All other materials, not specifically described but required for a complete and proper installation of the work of this section, shall be new, first-quality of their respective kinds, and as selected by the Contractor subject to the approval of the Architect.

PART 3 – EXECUTION

3.01 INSPECTION

A. Prior to installation of the work of this section, carefully inspect the installed work of all other trades and verify that such work is complete to the point where this installation may properly commence. Verify that painting may be completed in strict accordance with the original design and with the manufacturer's recommendations as approved by the Architect.

3.02 DISCREPANCIES

A. Do not proceed in areas of discrepancy until all such discrepancies have been fully resolved.

1. Start of painting will be construed as the applicator's acceptance of surfaces and conditions within a particular area.

3.03 MATERIALS PREPARATION

A. General

1. Perform all preparation and cleaning procedures in strict accordance with the paint manufacturer's requirements and application instructions as approved by the Architect.
2. Remove all removable items, which are in place and are note scheduled to receive paint finish or provide surface-applied protection prior to surface preparation and painting operations.
3. Following completion of painting in each space or area, reinstall the removed items by using workmen skilled in the necessary trades.
4. Clean each surface to be painted prior to applying paint or surface treatment.
5. Remove oil and great with clean cloths and cleaning solvents of low toxicity and a flash point in excess of 38ºC (100ºF), prior to start of mechanical cleaning.
6. Schedule the cleaning and painting in coordination with the Owner.

B. Preparation of Metal Surfaces: Clean non-galvanized, ferrous metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with recommendations of the Steel Structures Painting Council.

1. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.
2. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush; clean with solvents recommended by the paint manufacturer, and touch-up with same primer as the shop coat.
3. On galvanized steel, aluminum and other non-ferrous metals: clean bare metals with oil and grease emulsifier in accordance with manufacturer's instructions. BM Corotech V600 or XIM GON-20 Prep Cleaner or equal.
4. Allow to dry thoroughly before application of paint.

3.04 STAIN APPLICATION

A. Clean wood surfaces to be painted of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view and dust off. Scrape and clean small, dry seasoned knots and apply a thin coat of white shellac or other recommended knot sealer before application of priming coat. After priming fill holes and imperfections in finished surfaces with putty or plastic wood filler. Sandpaper smooth when dried.

B. Stain or seal wood required to be painted immediately upon delivery to job. Prime edges, ends, faces, undersides, and backsides of such wood, including cabinets, counters, cases and paneling.

C. When transparent finish is required, use spar varnish for back priming.

D. Back-prime paneling on interior partitions only where masonry, plaster, or other wet wall construction occurs on backside.

E. Seal tops, bottoms, and cut-outs of unprimed wood doors with a heavy coat of varnish or equivalent sealer immediately upon delivery to job.

3.05 PAINT APPLICATIONS

A. General

1. Apply products in accordance with manufacturer's instructions.
2. Secure color schedules before applying paint or finish. Tint primer and undercoat to the approximate shade of the finish coat.
3. Apply all materials under adequate illumination and as follows:

    a. Brush Application: Brush out and work all brush coats onto the surfaces in an even film. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, and other surface imperfections will not be acceptable.
    b. Spray Application:

        1) Confine spray application to metal framework and similar surfaces where hand brushwork would be inferior.
        2) Wherever spray application is used, apply each coat to provide the equivalent hiding of brush-applied coats. Do not double back with spray equipment for the purpose of building of film thickness of two coats in one pass.

4. Allow sufficient drying time between coats. Modify the period as recommended by the material manufacturer to suit adverse weather conditions.
5. Apply materials in sufficient quantity to insure complete coverage and hide. Provide and apply additional coats until paint film is uniform in finish, color, appearance, and coverage.

B. Cleaning:

1. Promptly remove spilled, splashed, or splattered paint on finish as work proceeds and upon completion.
2. Keep premises free from any unnecessary accumulation of tools, equipment, surplus materials, and debris during progress of work.
3. Upon completion of work, leave premises in neat and clean condition.

C. Completed work shall match the approved samples for color, texture, and coverage. Remove, refinish, or repaint all work not in compliance with specified requirements.

3.06 PAINTING SCHEDULE

A. General: Painting required under this section is called for on the drawings. Paint types for specific surfaces, exterior and interior are as defined below:

Exterior Work			
Surface	**1st Coat**	**2nd Coat**	**3rd Coat**
Hollow Metal Doors & Frames (Note 3 & 4)	B or *	A	A
Exposed Miscellaneous Metal or Structural Steel (Note 3 & 4)	T or *	I	I
Steel Handrails & Steel Lintels (Note 3 &4)	T	I	I
Traffic Bearing Exterior Metals (Steel Ladders – Foot Traffic) (Note 3 & 4)	N	R	R
Aluminum (Note 4)	B	A	A
Wood, Visible Blocking, Plywood	C	D	D
Visible Metal Plaster accessories adjoining stucco	T	I	I
Concrete Block	E	F	F
Galvanized Metal (Note 4)	B	I	I
Concrete Walls	O	F	F
Interior Work			
Surface	**1st Coat**	**2nd Coat**	**3rd Coat**
Concrete Block	E	G	G
Plaster	M	G	G
Gypsum Drywall	M	G	G
Concrete Walls	O	G	G
Concrete Floors, light to moderate duty, (Note 1) 1st coat is a thin coat to prime	P	P	P
Concrete Floors, moderate to Heavy duty, no vehicular traffic (Note 1)	N	Q	Q
Concrete Floors (High Vehicle Traffic, Wet Environments) (Note 1)	N	U	R
Wood-Painted (Note 2 & 5)	C	G	G
Wood-Natural Finish (Note 5)	J	J	J
Wood-Stained Finish (Note 5)	V	S – 2 coats	J – 2 coats
Hollow Metal, Steel Handrails & Steel Stair Components (Note 3 & 4)	B or *	A	A
Exposed Structural Steel & Steel Joists (Note 3 & 4)	B or *	K or L	K or L
Galvanized Steel Floor or Roof Deck (Note 4)	B	K or L	K or L
Miscellaneous Metal (Note 3 & 4)	B or *	L	L
Steel Floor Deck (Diamond Plate etc.) (Note 3 & 4)	N	R	R
Galvanized Metal (Note 3 & 4)	B	A	A
Exposed Ductwork (Note 4)	B	K or L	K or L

*Shop Coat – See other sections of Project Manual

Note 1: Where non-skid properties are required, a non-skid additive shall be used. Apply per manufacturer's instructions. Confirm if required via Architect.

Note 2: This is for large exposed surfaces. Where paint is indicated on narrow recesses, or on visible surface of back-up supports or blocking, use flat enamel.

Note 3: Inspect shop coat and touch up prior to finish coat application to prevent finish coat contacting bare steel. All exposed structural steel is to be painted in finished areas as per schedule unless noted otherwise on the Contract Documents.

Note 4: Prior to priming and painting of exposed ductwork, galvanized steel, aluminum and other non-ferrous metals the Contractor shall clean bare metal with an oil and grease emulsifier (Moore's INSL-X Heavy Duty Degreaser CL-0100 or XIM GON-20 Prep Cleaner or equal). This product shall be ready to apply from the container. Careful surface preparation and cleaning is required. All surfaces shall be thoroughly clean and free from all grease, wax, oil, polish, loose paint, dirt or rust. Do not use mineral spirits, turpentine solvent or cleaners which will leave an oily residue. Apply clean and remove/rinse in accordance with manufacturer's instructions.

Note 5: For Wood Flooring finishes see Wood Flooring Specification Section included elsewhere in Division 09 of the Project Manual.

3.07 KEY TO PAINTS

* Shop coat: See other section of Project Manual.

A	Moore's Corotech Acrylic DTM Enamel Semi-Gloss V331 or Ultra Spec Acrylic DTM Enamel Semi-Gloss HP29 S-W Pro Industrial DTM Acrylic Semi-Gloss, B66W01151 or S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series
B	Moore's Corotech Acrylic Metal Primer V110 or Ultra Spec Acrylic Metal Primer HP04 S-W Pro Industrial Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series
C	Moore's Fresh Start Multipurpose Oil-Based Primer C085 S-W Extreme Block Interior/Exterior Stain Blocking Primer, B51W00100 or S-W White Synthetic Shellac Stain & Odor Blocking Primer, B49W00060
D	Moore's Ultra Spec EXT Low Lustre Finish N455 S-W A-100 Exterior Latex Low Sheen, A12W00151 or S-W SuperPaint Exterior Latex Low Lustre, A78-Series
E	Moore's Ultra Spec Masonry Int/Ext Hi-Build Block Filler 571 or Moore's Blockfiller 244 S-W Pro Industrial Heavy Duty Block Filler (B42 Series) or S-W PrepRite® Interior-Exterior Latex Block Filler (B25 Series)
F	Moore's Ultra Spec EXT Gloss N449 S-W A-100 Exterior Latex Gloss, A08 Series or S-W SuperPaint Exterior Latex Gloss, A84-Series
G	Moore's Ultra Spec 500 Interior Latex Semi-Gloss T546 or BM Ultra Spec 500 Interior Latex Eggshell T538 (Item "G" gloss shall be determined by this Architect) S-W ProMar 200 Zero VOC Interior Latex Eg-Shel (B20-2600 Series) or Semi-Gloss (B31-2600 Series)
H	Not Used
I	Moore's Super Spec HP Urethane Alkyd Gloss Enamel CP22 S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss (B53 Series) or Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss (B65 Series)
J	Moore's Benwood Stays Clear Acrylic Polyurethane Low Lustre W423 Minwax Water-Based Polycrylic [for vertical applications only, no floors] or Minwax Oil-Modified Polyurethane (furniture, woodwork, cabinets, doors, hardwood floors)

K	Moore's Latex Dry Fall Flat 395 S-W Pro Industrial™ Waterborne Acrylic Dryfall Flat (B42 Series)
L	Moore's Ultra Spec 500 Interior Acrylic Flat T535 S-W ProMar 200 Zero VOC Interior Latex Flat (B30-2600 Series)
M	Moore's Drywall Primer 380 S-W ProMar® 200 Zero V.O.C. Interior Latex Primer (B28 Series)
N	Moore's Corotech 100% Solid Epoxy Pre-Primer V155 S-W Macropoxy 920 Pre-Prime (B58 Series)
O	Moore's Ultra Spec Masonry Int/Ext 100% Acrylic Masonry Sealer 608 or N609 S-W Loxon® Acrylic Conditioner - Clear or White (LX03 Series) or S-W Loxon Concrete & Masonry Primer/Sealer (LX02 Series)
P	Moore's Latex Floor & Patio Enamel (Low Sheen) N122 or Corotech Command (Satin) CV392 S-W Porch & Floor Enamel Interior-Exterior Acrylic Satin (A32 Series) or Macropoxy 646 Fast Cure Epoxy (B58 Series)
Q	Moore's Latex Floor & Patio Enamel Low Sheen N122, or BM Corotech Fast Dry Polyamide Epoxy V410 (Item "Q" shall be as determined by this Architect). S-W Porch & Floor Enamel Interior-Exterior Acrylic Satin (A32 Series) or Macropoxy 646 Fast Cure Epoxy (B58 Series)
R	Moore' Corotech Aliphatic Acrylic Urethane Gloss V500 S-W Hi-Solids Polyurethane 250 Aliphatic Polyurethane Semi-Gloss or Gloss (B65 Series)
S	Minwax Wood Finish, Water Based, Semi-Transparent, Color Stain
T	Moore's Super Spec HP Alkyd Metal Primer CP06 or Corotech Universal Metal Primer CV131 S-W Pro Industrial Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series
U	Moore's Corotech 100% Solids Epoxy Floor Coating V430 S-W Armorseal 650 SL/RC Self-Leveling/Recoatable Epoxy (B58 Series)
V	Minwax Water-Based Pre-Stain Wood Conditioner

END OF SECTION

DIVISION 10 – SPECIALTIES

SECTION 107516 – GROUND SET FLAGPOLES

PART 1 – GENERAL

1.01 SCOPE

A. Under this section, the Contractor shall furnish and erect flagpoles, complete with aluminum pole, flash collar, grounding rod, internal stainless-steel halyard, ground sleeve, fittings and accessories, and shall include the construction of concrete foundation and base in accordance with the plans, specifications and the direction of the Engineer.

1.02 RELATED SECTIONS

A. Section 033000 – Cast-In-Place Concrete
B. Section 079200 – Joint Sealants
C. Section 310000 – Earthwork

1.03 SUBMITTALS FOR REVIEW

A. Submittals shall be in accordance with Section 013300 – Submittal Procedures.

B. Shop drawings showing all installation details and materials shall be submitted as outlined in the General Conditions.

1.04 QUALITY ASSURANCE

A. All materials shall be accompanied by the manufacturer's certification.

1.05 DELIVERY, STORAGE AND HANDLING

A. Before shipment, the poles shall be spirally wrapped with heavy paper, covered with burlap, wood-stripped and steel banded for protection during transit.

B. The unexposed portion of flagpole below ground shall receive a heavy coat of black asphaltum inside and outside before shipment.

C. Aluminum flagpoles, if stored in original packaging for extended periods, can become stained due to adverse chemical reactions between aluminum and certain packaging materials. When poles are to be stored on site for extended periods, all wrapping material should be removed and the poles stored bare in a dry place off the ground.

PART 2 – PRODUCTS

2.01 MATERIALS

A. The flagpole system shall be cone tapered aluminum, 40-foot mounting height (standard ground set mount), internal halyard type, complete with fittings and accessories as manufactured by Pole Tech Co., 97 Gnarled Hollow Road, East Setauket, NY 11733 or approved equal.

B. Material shall meet ASTM B241 and be Aluminum Alloy 6063-T6, seamless tubing having uniform conical taper.

C. Finish shall be polished satin brush per AA M32.

D. Hood: shall be cast aluminum.

E. Truck: Revolving with stainless steel bearing concealed inside a cylindrical hood

F. Halyard (Internal): Stainless steel aircraft cable with two chrome plated bronze swivel snaphooks, plastic covered counterweight, and beaded sling.

G. Winch: A winch is provided inside the pole at 4'-6" above ground level to raise and lower the flag by use of a removable hand crank. The winch contains an automatic brake system to permit locking of the flag in any position.

H. Collar shall be spun aluminum flash collar finished to match pole.

I. Foundation sleeve shall be fabricated from 16-gauge galvanized corrugated steel tube with 3/16" thick steel baseplate and support plate, 3/4" diameter x 18" long ground spike, and steel centering wedges.

J. Mounting hardware for ground set pole shall be flash collar of aluminum, foundation sleeve of 16-gauge corrugated galvanized steel.

K. Snaphook covers shall be neoprene.

L. Provide and install one (1) 5’ x 8’ cotton American Flag.

M. Provide LED Solar Disk Topper Flagpole Light (3600 lumens) at top of flagpole.

PART 3 – EXECUTION

3.01 INSTALLATION AND GENERAL

A. No concrete shall be poured until after the excavation has been inspected and approved by the Engineer.

B. The excavation for the foundation shall be at least one foot larger than the concrete base, in order to permit work on the forms. After removal of the forms, the space around the concrete footing shall be backfilled with acceptable material thoroughly rammed and tamped in place.

C. The concrete foundation shall be poured in two (2) courses. The concrete for the footing course shall be poured and allowed to set before setting and grouting of socket tube. Concrete for upper portion of the foundation shall be placed after socket tube, inserts, and reinforcing have been properly set and secured to maintain their proper position during pouring.

D. The pole shall be set into the socket hole so as to wedge securely at bottom, then carefully plumbed in every direction and wedged at top of socket hole with wedges as shown, to hold pole securely in a vertical, plumb position. After wedging the pole, the space between pole and socket hole shall be filled with dry sand to within two (2") inches of the top of hole, well compacted by tapping and tamping pole. Sand shall be heated to eliminate all moisture. The space at the top of the hole shall then be filled with mastic or other approved waterproof compound.

E. The space between pole and collar shall be filled with traffic grade sealant as specified in Section 079000 or equal.

F. The flagpole shall not be set until after the concrete has thoroughly hardened, and in no case sooner than eight (8) days after pouring of the concrete.

END OF SECTION

DIVISION 11 – EQUIPMENT

SECTION 116833 – ATHLETIC FIELD EQUIPMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 01, General Requirements, are included as a part of this Section as though bound herein.

1.02 SUMMARY

A. Provide labor, materials, and equipment necessary for complete installation of the following items when shown on the Drawings and as specified herein. Work under this Section includes, but is not limited to, the following:

1. Soccer goals (NCAA).
2. Lacrosse goals.
3. Softball bases.
4. Foul Poles.
5. Temporary Outfield Fence.

1.03 RELATED SECTIONS

A. Section 033000 – Cast-in-Place Concrete
B. Section 310000 – Earthwork
C. Section 310001 – Site Work General Provisions
D. Section 321813 – Synthetic Grass Surfacing (Blended Fiber)

1.04 SUBMITTALS

A. Comply with the requirements of Section 013300 – Submittal Procedures and as modified below.

B. Manufacturer's Data:

1. Submit copies of manufacturer's product data, specifications, installation instructions and details, and copy of manufacturer’s warranty for each component.

C. Shop Drawings:

1. Provide shop drawings for equipment supplied under this section.

1.05 REFERENCED STANDARDS

A. Comply with the requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.

1. National Federation of State High School Associations (NFHS)
2. National Collegiate Athletic Association (NCAA)
3. International Amateur Athletic Association (IAAF)
4. American Sports Builders Association (ASBA)

1.06 QUALITY ASSURANCE

A. Manufacturers warranties shall pass to the Owner and certification made that the product materials meet all applicable grade trademarks or conform to industry standards and inspection requirements. The Manufacturer shall have a current American Sports Builders Association (ASBA) Supplier Certificate of Distinction designation.

1.07 PRODUCT DELIVERY AND STORAGE

A. Materials delivered to the site shall be examined for damage or defects in shipping. Any defects shall be noted and reported to the Owners representative. Replacements, if necessary, shall be immediately re-ordered, so as to minimize any conflict with the construction schedule. Sound materials shall be stored above ground under protective cover or indoors so as to provide proper protection.

PART 2 - MATERIALS

2.01 SOCCER GOALS

Regulation Size Round Faced Soccer Goals and Accessories

A. SG824R 8' x 24' Regulation Size Round Faced Soccer Goals and Accessories as Manufactured and/or Supplied by, or approved equal:

Sportsfield Specialties, Inc.
P.O. Box 231
41155 State Highway 10
Delhi, NY 13753
p. 888-975-3343
f. 607-746-8481
www.sportsfieldspecialties.com

B. Components:

1. SG824R 8' x 24' Regulation Size Round Faced Soccer Goals:

A. Top Crossbar Fabricated of 6061-T6 Extruded Aluminum Tube Having the Following Attributes:
   a. Length: 24' - Regulation Size
   b. 4.375" Square x 4.688" Round Faced Crossbar, 3/16" (.1875") Wall Thickness
   c. Super Durable Powder Coated White Finish with Enhanced Resistance to UV and Fade
   d. 3/16" (0.1875") Thick Formed Aluminum Channel Crossbar Attachment Brackets with Welded Tap Blocks, Mill Finish

B. One Piece End Frame Construction Fabricated of 6061-T6 Extruded Aluminum Tube Having the Following Attributes:
   a. 4.375" Square x 4.688" Round Faced Corner Post, 8'H, 3/16" (.1875") Wall Thickness

b. Rolled Side Frame, 2” x 3” x 0.125” Thick Wall, TIG Welded to Corner Upright Posts
c. Radius Backside Corners
d. Super Durable Powder Coated White Finish with Enhanced Resistance to UV and Fade

C. Rear Bottom Ground Bar Fabricated of 6061-T6 Extruded Aluminum Tube Having the Following Attributes:
a. 2” x 2” x 0.25” Thick Wall with Welded ½” Aluminum End Plates
b. Super Durable Powder Coated White Finish with Enhanced Resistance to UV and Fade

D. Included Accessories:
a. Welded Aluminum Net Clips with Lifetime Guarantee
b. 5mm Braided, Knotless White High Tenacity Polypropylene Soccer Net with Rope Bound Perimeter and 4” Square Mesh – 8.2’H x 24.4’L x 4.3’B x 8.6’D
c. Model Specific Hardware Kit and Installation Instructions
d. Ground Stake Storage Compartments
e. All SG824R 8’ x 24’ Regulation Size Round Faced Soccer Goals Meet and Exceed Current ASTM F2950-14 Standard Safety and Performance Specification for Soccer Goals and F1938-98 Standard Guide for Safer Use of Movable Soccer Goals
f. Five (5) Year Limited Manufacturer’s Product Warranty

2.02 LACROSSE GOALS

A. Lacrosse Goals and Accessories as Manufactured and/or Supplied by, or approved equal:

Sportsfield Specialties, Inc.
P.O. Box 231
41155 State Highway 10
Delhi, NY 13753
p. 888-975-3343
f. 607-746-8481
www.sportsfieldspecialties.com

B. Components:

1. LCG Lacrosse Goals:
a. Welded One (1) Piece Top Crossbar and Uprights Frame is Fabricated of 1.5” Schedule 40 Steel Pipe (1.9” O.D.) with Welded 3/8” Diameter Net Tie Bars Attached on the Rear Face
b. Ground Bars are Fabricated of 3/8” x 4” Steel Flat Bar with Holes for Net Attachment Purposes
c. Powder Coated Orange Finish
d. 6’H x 6’W x 7’D 6mm Braided, Knotless White Nylon Net, Includes #48 Braided White Nylon Twine for Net Attachment Purposes
e. Stainless Steel Assembly Hardware
f. Model Specific Hardware Kit and Installation

Instructions

2.03 SOFTBALL EQUIPMENT

A. Bases (Softball)

1. Hollywood All-Bury Home Plate, official size.

2. Hollywood Impact Base System (SHIBL) consisting of 3, 15” x 15” x 2.5” bases, 6” base stanchions. Ground anchor mounts and base plugs shall be provided for each base.

3. Hollywood, direct bury, 4-sided professional pitching rubber, 6” wide x 24” long.

4. The above shall be supplied by Sportsfield Specialties, Inc. or approved equal.

B. Foul Poles

1. Model FPW420, 20’-0” ground sleeve mounted foul poles with wings. 4” Aluminum pipe, powder coated white, 18” wide x 12’-0” long 1/8” stamped aluminum sheet wings with double reinforced bends welded at corners including Model GS0448 ground sleeve and cap as manufactured by Sportsfield Specialties Inc. or approved equal.

C. Temporary Outfield Fence

1. Temporary Outfield Fencing shall be SF4PT - 4’H Portable Seasonal Fence System as manufactured by Sportsfield Specialties Inc. or approved equal.
    a. Fence Panel:
        i. Dimensions: 4’ high x 9’-6” wide.
            1. Top of Fence Panel to Finish Grade: 4’-3/4”.
        ii. Fabricated of Stamped 1/8” (0.125”) Aluminum Panel with Double Reinforced Bends Welded.
        iii. 2” Square Open Mesh Size.
        iv. 1/8” (0.125”) Aluminum Panel Mounting Brackets.
        v. Powder Coated Finish.
    b. Steel Base Mounts:
        i. Fabricated with ¼” and 3/8” Powder Coated Steel Plate.
        ii. Quantity: Two (2) Per Fence Panel.
        iii. Stainless Steel attachment hardware.

D. Refer to drawing CS3.01 for additional products required not specified within this section, including bat and helmet racks, shelving, etc.

PART 3 - EXECUTION

3.01 EQUIPMENT INSTALLATION

A. All exterior equipment shall be installed per ASTM F567 and the manufacturer’s recommendations for the specific project location, and as per details on the drawings.

3.02 CLEANING

A. Clean up debris, unused material, and packaging and remove from site.

3.03 RESTORATION

A. Any areas of the project site that are disturbed by the work shall be restored to the condition in which they existed prior to this work.

B. Grass areas disturbed by this work shall be restored with topsoil & seed.

END OF SECTION

DIVISION 11 – EQUIPMENT

SECTION 116833.33 – ENCLOSED DUGOUTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 01, General Requirements, are included as a part of this Section as though bound herein.

1.02 SUMMARY

A. Provide all equipment and materials, and do all work necessary to furnish and install the enclosed dugouts, as indicated on the drawings and as specified herein. Athletic equipment shall include, but not be limited to:

1. Enclosed Dugout 8’W x 40’L

1.03 RELATED SECTIONS

A. Section 033000 – Cast-in-Place Concrete
B. Section 310000 – Earthwork
C. Section 310001 – Site Work General Provisions
D. Section 321813.11 – Synthetic Grass Surfacing
E. Section 321823.13 – Baseball – Softball Surfacing

1.04 SUBMITTALS

A. Comply with the requirements of Section 013300 – Submittal Procedures and as modified below.

B. Manufacturer's Data:

1. Submit copies of manufacturer's product data, specifications, installation instructions and details, and copy of manufacturer’s warranty for each component.

C. Shop Drawings:

1. Provide shop drawings for baseball & softball backstops, signed & sealed by a NYS licensed professional engineer.

1.05 REFERENCED STANDARDS

A. Comply with the requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.

1. National Federation of State High School Associations (NFHS)
2. National Collegiate Athletic Association (NCAA)
3. International Amateur Athletic Association (IAAF)
4. American Sports Builders Association (ASBA)

1.06 QUALITY ASSURANCE

A. Manufacturers warranties shall pass to the Owner and certification made that the product materials meet all applicable grade trademarks or conform to industry standards and inspection requirements. The Manufacturer shall have a current American Sports Builders Association (ASBA) Supplier Certificate of Distinction designation.

1.07 PRODUCT DELIVERY AND STORAGE

A. Materials delivered to the site shall be examined for damage or defects in shipping. Any defects shall be noted and reported to the Owners representative. Replacements, if necessary, shall be immediately re-ordered, so as to minimize any conflict with the construction schedule. Sound materials shall be stored above ground under protective cover or indoors so as to provide proper protection.

PART 2 - MATERIALS

2.01 ENCLOSED DUGOUT

A. ED8X48 - Enclosed Dugout 8'W x 48'L as Manufactured and Supplied by:

Sportsfield Specialties, Inc.
P.O. Box 231
41155 State Highway 10
Delhi, NY 13753
p. 607-746-1460
www.sportsfieldspecialties.com
Or approved equal.

B. Design Criteria:

1. Building Code: ASCE 7-10
2. Maximum Wind Speed Rating: 140mph, Exposure Category C
3. Maximum Ground Snow Load: 60psf
4. Seismic Design: Category E, Ss=1.5g, S1=0.75g
5. Roof Pitch: 2" Rise Back-to-Front

C. Components:

1. Enclosed Dugout:
    a. Overall Dimensions: 8'-1"W x 48'L
    b. Wall Frames Fabricated of:
        i. 3-1/2" x 3-1/2" x 3/16" (0.1875") Structural Steel Tube, Fully Welded Construction
        ii. Vertical Columns Include Factory Pre-Drilled 8-1/4" x 8" x 5/8" (0.625") A36 Steel Base Mounting Plates
            1. Maximum Allowable Spacing Between Rear Columns is Eight Feet (8') On-Center
            2. Maximum Allowable Spacing Between Front Columns is Sixteen Feet (16') On-Center
        iii. 18 Gauge Galvanized Steel Track and Studs, 16" On-Center (In Wall)

c. Roof Frame Fabricated of:
    i. 3-1/2” x 3-1/2” x 3/16” (0.1875”) Structural Steel Perimeter and Transverse Roof Tubes, and 3” x 2” x 11 Gauge Structural Steel Longitudinal Roof Tubes
    ii. Fully Welded Construction
d. Structural Steel Wall and Roof Frame Receives a Powder Coated Primer and Coated Finish, Various Standard and Custom Colors Available
e. Roofing Material is 29 Gauge, Classic Rib® Style Corrugated Metal with J-Channel Drip Cap Installed on Front and Sides, Various Standard Paint Finish Colors Available
f. Exterior Siding:
    i. Standard SmartSide® Lap Siding (Metal Siding Available Upon Request)
    ii. Installed over OSB Sheathing and Housewrap
g. Finished Interior Walls:
    i. Interior Walls Covered with a Minimum Thickness of 1/2” (0.5”) Medium Density Overlay (MDO) Fir Plywood Manufactured with 100% Waterproof Adhesives and Coated with Resin Treated Fiber Overlay that Provides Smooth Painting Surface, Seams Sealed with Caulk and Covered with Wood Batten Trim Strips
    ii. Interior Wall Surface and Wood Trim Hand Spackled, Sanded and Sealed with Exterior Grade Primer and Paint Finish
h. Includes Carbon Steel Anchoring Hardware, Epoxy and Lifting Eye Bolts

2. Stamped and Sealed Drawings and Calculations by a Licensed Professional Engineer of Record in the State of Project Location
3. Options:
    a. EDSC - Storage Closet
        i. Size: 6’ x 8’
        ii. Fully Integrated with Enclosed Dugout
        iii. Includes One (1) 3'W x 6'-8”H Galvannealed 18 Gauge Steel Hollow Door with Honeycomb Flush Core, Galvannealed 16 Gauge Steel Door Frame, Three (3) Stainless Steel Hinges, One (1) Lever Handle and Lockset, One (1) Door Sweep, One (1) Closer, One (1) Threshold and One (1) Weatherstrip, Door and Door Frame Receive a Powder Coated Primer and Finish
        iv. Interior Walls Finished with Primed 7/16” Oriented Strand Board (OSB) Panels Attached 18 Gauge Flange Steel Studs

    b. ED8X48ELEC - Standard Electrical Package Includes Five (5) Overhead Lights Three (3) Light Switches Three (3) Dual Outlet Receptacles and One (1) Junction Box for Electrical supply. Closet shall also have lighting.

PART 3 - EXECUTION

3.01 INSTALLATION OF EQUIPMENT

A. All Dugouts shall be installed as recommended per manufacturer's written instructions and as indicated on the drawings.

B. Dugouts shall be anchored to concrete slab haunch as per plan details with S.S. hardware supplied by the manufacturer.

C. Installer should have a minimum of five (5) Dugout installations or similar experience in the previous three (3) years.

END OF SECTION

DIVISION 11 – EQUIPMENT

SECTION 116843 – ELECTRONIC SCOREBOARDS

PART 1 – GENERAL

1,01 DESCRIPTIONS OF WORK

A. The work of this Section includes exterior, wireless, LED electronic scoreboards including control center and other accessories for complete functional installation.

B. Supply and install scoreboards and controllers including concrete footings and steel support posts, wiring of the scoreboard and furnish and install disconnect switch and convenience outlet at each scoreboard.

Note: The General Contractor shall supply and install the support steel and concrete footings for scoreboard A and B. The electrical contractor shall supply, install, and wire the scoreboards and accessories.

1.02 RELATED SECTIONS

A. Section 033000 – Cast-In-Place Concrete
B. Section 099000 – Painting
C. Section 310000 – Earthwork

1.03 REFERENCES

A. National Electrical Code (NEC).

B. American Society for Testing and Materials (ASTM) Publications:

1. ASTM B221 - Aluminum-Alloy Extruded Bar, Rod, Wire, Shape, and Tube.
2. ASTM A6 – Steel Shapes

C. Federal Communications Commission, Part 15 Rules & Regulations, EN60950-1, EN55022 & EN55024.

D. UL and C-UL Standard for Electric Signs

E. Building Code of New York State, latest edition.

1.04 SUBMITTALS FOR REVIEW

A. Submittals shall be in accordance with Section 013300 – Submittal Procedures.

B. Product data for scoreboards, controls, and accessories shall include descriptions of control functions etc.

C. Installation drawings, face layout, dimensions, construction, electrical wiring diagrams, and method of anchorage.

D. Copy of guarantee for review by Architect.

E. Manufacturer's installation instructions.

F. Finish Samples.

1.05 QUALITY ASSURANCE

A. All components including scoreboard, control center, control cable, and other accessories and installation hardware shall be products of a single manufacturer.

B. Manufacturer qualifications: Company specializing in manufacturing electronic scoreboards with 10 years minimum successful world-wide experience.

C. Scoreboards shall be designed for exterior installation with weatherproof housing and optical isolation circuitry to reduce potential damage from electrical storms.

D. Should service be necessary, specialized personnel shall not be required. Modular “plug and play” components will be housed in an internal protective enclosure.

E. Scoreboards and other electrical components shall be certified for use in United States and Canada by Underwriter Laboratories, (UL) Inc. and shall bear either UL or C-UL label only.

F. Scoreboards and other electrical components shall be electrically grounded in accordance with National Electrical Code (NEC), Article 600.

G. Scoreboard cabinetry and attachment shall meet or exceed the 2009 IBC standard of 150 mph wind loading.

1.06 DELIVERY, STORAGE AND HANDLING

A. Protect scoreboard from damage during delivery and store under tarp when time from delivery to installation exceeds one week.

1.07 GUARANTEE

A. Provide under provisions of Section 017000 – Contract Closeout.

B. Guarantee to cover defects in materials and workmanship.

1. 1 years parts and factory labor guarantee for scoreboards, [wired controls,] and accessories from invoice date.

2. 2 years part and factory labor guarantee for wireless controls and receivers from invoice date.

3. Lifetime telephone support.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

A. Daktronics, Inc., 201 Daktronics Drive, P.O. Box 5128, Brookings, South Dakota 57006-5128, or approved equal. Local representative, Long Island Gym, (631) 666-9511.

B. The specified manufacturer / product(s) have been selected to establish a level of quality and do not prohibit equivalent manufacturers or their products. Requests to use equivalent (equal)

products of other manufacturers shall be submitted with the bid, in accordance with the General Conditions.

2.02 PRODUCTS

A. Scoreboard A – Softball Field (Baseball) - **Daktronics BA-2125** single-sided baseball scoreboard displays HOME and GUEST scores for up to 10 innings, total RUNS, to 99 and ER (errors) to nine for each team, AT BAT to 99, BALL to three, STRIKE to two, OUT to two and H/E (hit or error) with field position number for the error. Scoreboard can show TIME, or PITCH COUNT instead of AT BAT , as well as AT BAT or Pitch County on ;ace of H/E.

1. Scoreboard must be capable of scoring the following sports;

    a. Softball / Baseball

B. Scoreboard B - Multi-Use Field - **Daktronics MS-2009** single-sided multi-sport scoreboard displays period time to 99:59, HOME and GUEST scores to 99, PERIOD to nine, PLAYER number to 99 and PENALTY time to 9:59 for two players on each team and indicates team penalty. During the last minute of the period, the clock displays time to 1/10 of a second.

1. Scoreboard must be capable of scoring the following sports;

    a. Soccer
    b. Lacrosse

C. Shot Clocks

1. Provide two (2) Lacrosse Shot Clocks, **Model TI-2015.**

2.03 MATERIALS

A. **Scoreboard A** – General Information

1. Dimensions: 7'-0" high, 25’-0" wide, 0'-8" deep.

2. Base weight: 955 lbs with TNMCS and vinyl captions.

3. Base power requirement: 930 W, 7.8 Amps.

4. White LED digits.

5. Color: over 150 colors to choose from.

6. Construction
    a. Alcoa aluminum alloy 5052 construction
    b. Scoreboard back, face and perimeter: 0.063" thick
    c. Scoreboard top and bottom: 0.125" thick
    d. Digit faceplates: 0.063" thick

7. Digits
    a. All digits White LED.
    b. At Bat, Ball Strike and Out digits: 18" high
    c. All other digits: 24" high

d. Seven bar segments per digit
e. White PanaView® LED digit technology, Sealed weather tight.

8. Captions

a. Vinyl applied directly to scoreboard face, except Options where noted as TNMC's, digital, LED type.
b. AT BAT, BALL, STRIKE, OUT and H/E captions: 18" high.
c. All other digits are 15" high.

d. Color: As selected by the Owner.

9. Options

a. Provide optional Arch Truss panel above scoreboard with School and Mascot Names.
b. Scoreboard striping – same color as captions.
c. Dimmable digits.
d. Programmable LED Team Name Message Centers (TNMCs), 2 each.
e. GHz spread spectrum radio receiver.
f. Individual digit protective screens.
g. All Sport 5000® console.
h. PanaView® LED digit technology and option edge striping.

B. **Scoreboard B** – General Information

1. Dimensions: 10'-0" high, 25'-0" wide and 0'-8" deep.

2. Base weight: 1,270 lbs with TNMCS and electronic captions.

3. Base power requirement: 1500 W, 12.8 Amps

4. Color: over 150 colors to choose from.

5. Construction

a. Alcoa aluminum alloy 5052 construction
b. Scoreboard back, face and perimeter: 0.063" thick
c. Scoreboard top and bottom: 0.125" thick
d. Digit faceplates: 0.063" thick

6. Digits

a. All digits White LED.
b. Clock and Score digits are 24" high.
c. All other digits are 18" high.
d. Seven bar segments per digit.
e. White PanaView® LED digit technology

7. Captions

a. Optional Electronic Captions, digital, LED type.
b. HOME and GUEST captions: 15" high .
c. PLAYER and Penalty are 9" high.
d. Period caption is 10" high.

e. Color: As selected by the Owner.

8. Options

a. Scoreboard striping – same color as captions.
b. Programmable LED Team Name Message Centers (TNMCs).
c. Electronic Captions.
d. GHz spread spectrum radio receiver.
e. Individual digit protective screens.
f. All Sport 5000® console.
g. PanaView® LED digit technology and option edge striping.

C. **Shot Clocks**

1. Dimensions: 2’-4” high, 3’-4" wide and 0'-8" deep.

2. Base weight: 36 lbs.

3. Base power requirement: 35 W, 0.3 Amps

4. Digits
a. All digits Amber LED.

2.04 ACCESSORIES

A. Provide each scoreboard or accessory with control cable of length required and all electrical junction boxes, conduits, mounting hardware, and other accessories as required for a complete installation.

2.05 SCORING CONSOLES

A. Consoles shall be All Sport® 5000 controller.
B. Capable of scoring multiple sports through the use of keyboard inserts.
C. Capable of controlling other All Sport controlled scoreboards.
D. Console has a maximum power requirement of 6 watts.
E. Console recalls clock, score, and period information if power is lost
F. Console includes:

1. A rugged aluminum enclosure to house electronics.
2. A sealed membrane water-resistant keyboard.
3. A 32-character liquid crystal prompting display to verify entries and recall information currently displayed.
4. A 6' power cord to plug into a standard grounded 120 V AC outlet.
5. A 20' control cable to connect to the control receptacle junction box.
6. A practice timer mode
7. Can sound the horn at the end of each segment
8. Has 99 programmable segments
9. Displays the segment number and segment length
10. Has a programmable interval time

G. Optional Equipment

1. Hard carrying case
2. 2.4 GHz spread spectrum radio transmitter

3. Battery pack

2.06 SUPPORT POSTS

A. Support Posts shall be galvanized steel ASTM A36 as shown on the plans and in accordance with Section 051200 – Structural Steel Framing.

B. Support posts shall be primed and painted black, two (2) coats.

2.07 CONCRETE

A. Concrete for footings shall be 4,500 psi minimum and be placed in accordance with Section 033000 – Cast-in-Place Concrete.

PART 3 – EXECUTION

3.01 PREPARATION

A. Verify exact scoreboard and control center quantities and junction box locations with Architect.

B. Coordinate requirements for electrical power, concrete, steel erection, auxiliary framing and supports, suspension cables, and other components to be provided under other Specification Sections to ensure adequate provisions are made for complete, functional installation of scoreboards.

C. Coordinate scoreboard electrical requirements to ensure proper power source, conduit, wiring, and boxes are provided. Prior to installation, verify type and location of power supply.

3.02 INSTALLATION

A. Install scoreboards and accessories in accordance with manufacturer's instructions and approved installation drawings.

B. Before installation, field test scoreboards and accessories for operating functions. Ensure that scoreboards accurately perform all operations. Correct deficiencies.

C. Rigidly mount scoreboards and accessories level and plumb with brackets and fasteners.

D. Clean exposed surfaces.

E. Protect scoreboards and finishes from other construction operations.

F. Paint all support posts in accordance with paint manufacturers specifications.

3.03 DEMONSTRATION AND TRAINING

A. Provide demonstration and training session for Owner’s representative covering operation and maintenance of electronic scoreboard.

END OF SECTION

DIVISION 13 – SPECIAL CONSTRUCTION

SECTION 133416.53 – BLEACHERS (PERMANENT)

PART 1 – GENERAL

1.01 SYSTEM DESCRIPTION

A. Manufacture, Furnish and Deliver to the site, elevated, aluminum angle frame bleachers, including the following:

B. Aluminum angle frame substructure.

C. Aluminum decking and seating system.

D. Guard rail / fence system.

1.02 RELATED WORK

A. Related work specified under other sections of the specifications:

1. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

2. Division 03 sections for concrete slab base, where applicable.

3. Division 31, 32 & 33 sections for site work.

1.03 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturers must have ten years of experience in the manufacture of bleachers and grandstands; welders must be AWS certified; manufacturing capability according to various code compliances.

B. Installer Qualifications: Experienced in the proper installation of grandstands.

C. Source Quality Control: Mill Test Certification.

1.04 SUBMITTALS

A. Manufacturer's Product Data: Submit manufacturer's descriptive product data for project.

B. Shop Drawings: Manufacturer to submit shop drawings signed and sealed by a Professional Engineer licensed in the state where the project is located, and schedules for type, location, quantity, and details of steel and aluminum components required for project.

C. Certificates:

1. Welding Certificates with AWS conformance.

D. Product Sample: Submit one 18-inch seat sample.

E. Color Sample: If applicable, submit sample.

1.05 SITE CONDITIONS

A. Contractor to verify site features and benchmarks.

1.06 CODES AND STANDARDS

A. The Building Codes that apply to this project are the BCNYS, NFPA, and ICC-300, latest editions.

B. Design Loads:

1. Live Loads: Uniform loading - Structure = 100 psf Uniform loading - Seat and Tread plank = 120 plf.

2. Sway Loads: Perpendicular to seats = 10 plf Parallel to seats = 24 plf.

3. Guardrail Loads: Uniform load = 50 plf applied in any direction

4. Concentrated load = 200 pounds applied in any direction.

5. Wind Loads: 139 MPH.

1.07 WARRANTY

A. Warranty shall guarantee bleachers to be free from defect in materials and workmanship for a period of 2 years under normal use. Warranty period shall begin on date of completion for projects installed by manufacturer, or its subcontractors.

B. Anodized finish of plank extrusions shall be covered by a 5 year warranty against loss of structural strength or finish deterioration due to exposure to weather conditions or UV rays. Discoloration of mill finish aluminum due to galvanic reaction not covered.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Elevated, Mitered, Angle Frame Bleachers shall be manufactured by Sturdisteel, a division of Schultz Industries, Inc., PO Box 2655, Waco, Texas 76702, (800) 433-3116, www.sturdisteel,com or Architect approved equal.

B. The specified manufacturer / product(s) have been selected to establish a level of quality and do not prohibit equivalent manufacturers or their products. Requests to use equivalent (equal) products of other manufacturers shall be submitted in accordance with the General Conditions.

C. Product Components:

1. Quantity and Size: Shall consist of,

a. One (1) 3’-6” elevated, mitered unit, 8 rows high x 42’-5” +/- x 39’-7” x 42’-5” long, with ADA seating. Net seating capacity per unit = 470 +/- (excluding aisles, based on 18" per seat).

2. Framework: Prefabricated aluminum angle or galvanized steel angle at max. 6' spacing joined by means of aluminum angle cross bracing.

3. Shop connections: Welded to meet AWS standards.

4. Joint Sleeve Assembly: Internal splices, where required shall be two per joint and shall penetrate the joint a minimum of 8 in each direction and be riveted at one end only to allow for contraction and expansion.

5. Rise and Run Dimensions:

   Standard rise/run = 8" rise/ 24" run . Seat height 17” above tread.

6. Front Walkway:

   a. Clear width: 5'-1".

   b. Elevated between 3’-6” above grade at benchmark as shown on the drawings.

7. Entry stairs to be firmly anchored to uniformly poured concrete bases.

   a. Stair rise: 6" per N.Y.S. Building Code with aluminum closure and contrasting aluminum stair nose.

   b. Stair tread depth: 11" per N.Y.S. Building Code.

   c. Guardrails on stair to be 42" above leading edge of step with intermediate rail spacing at 7".

   d. Stairs to have handrail extension. The handgrip portion of handrails shall not be less than 1 1/2" or more than 2" in cross-sectional dimension or the shape shall provide an equivalent gripping surface. The handgrip portion of handrails shall have a smooth surface with no sharp corner. The top of handrails and handrail extensions shall be placed not less than 34" or more than 38" above the nosing of treads and landings. Handrails shall be continuous the full length of the stairs and shall extend in the direction of the stair run not less than 12" beyond the bottom riser. Ends shall be returned or shall terminate in newel posts or safety terminals.

8. Aisles:

   a. Aisles with seating on both sides to have 34" high handrail with intermediate rail at approximately 22" above tread.

   b. Anodized aluminum handrails with rounded ends are discontinuous to allow access to seating through a space 22" (minimum) to 36" (maximum).

   c. Aluminum tread nosing of contracting color on aisle steps.

9. Decking:

   a. Rise per row: 8"; depth per row: 24"; unless otherwise shown on the drawings.

   b. Each seat 17" above its respective tread.

   c. Decking Arrangement: Interlock aluminum decking system.

   d. Seating: Aluminum bench seat- 2 x 10, Die #62380.

   e. Aluminum gutters and downspouts to be provided at butted end joints of interlocked decking.

10. Guardrailing:

    a. To be at all sides of bleacher, entry stairs and ramps, portals, and landings. Railing to be anodized aluminum with end plugs at ends of straight runs and/or elbows at corner. All guardrails shall be secured to angle rail risers by galvanized fasteners. Railing shall be 42" above walkways and entrances. Railing shall be 42" above the nose of any adjacent seat.

    b. Guardrailing on sides and back shall be 1” mesh, 9 gauge black vinyl coated chain link fencing fastened in place with galvanized fasteners and black vinyl coated ties.

    c. Guardrailing on front shall be 2” mesh, 9 gauge black vinyl coated chain link fencing fastened in place with galvanized fasteners and black vinyl coated ties.

11. Ramps:

    a. Slope: 1 in 12.

    b. Guardrail to be 42" above ramp with intermediate rail spacing at 7".

    c. Ramps to have handrail extension. The handgrip portion of handrails shall not be less than 1 1/2" or more than 2" in cross-sectional dimension or the shape shall provide an equivalent gripping surface. The handgrip portion of handrails shall have a smooth surface with no sharp corners. The top of handrails and handrail extensions shall be placed not less than 34" or more than 38" above the ramp surface. Handrails shall be continuous the full length of the ramp and shall extend in the direction of the ramp not less than 12" beyond the end of the ramp. Ends shall be returned or shall terminate in newel posts or safety terminals.

12. Handicap Provisions:

    a. Quantity of wheelchair spaces: per BCNYS or as shown on the drawings.

    b. Riser area adjacent to wheelchair spaces to have intermediate construction so 4" sphere cannot pass through opening.

D. Materials/Finishes:

1. Frame Work:

    a. Aluminum: Structural fabrication with aluminum alloy 6061-T6 mill finish. Each frame shall be unit-welded, using metal inert gas method, under guidelines by the American Welding Society.

    b. Galvanized Steel: ASTM A529 GR50. All steel is hot dipped galvanized after fabrication to A 123 specifications.

    c. All cross bracing and horizontal bracing shall be aluminum angle 6061-T6 mill finish.

2. Extruded Aluminum:

    a. Seat planks: Aluminum alloy 6063-T6, clear anodized 204R1, AA-M10C22A31 Class II with a wall thickness nominally .078” for impact and deformation resistance.

    b. Tread and Riser Planks: Aluminum alloy 6063-T6, mill finish with a wall thickness nominally .078” for impact and deformation resistance.

c. Guardrail Pipe: 1-5/8" OD schedule 40 aluminum alloy 6061-T6, clear anodized 204R1, AA-M10C22A31, Class II. 4. Handrail Pipe: 1-7/8" OD schedule 40 aluminum alloy 6105-T1, clear anodized 204R1, AA-M10C22A31, Class II.

3. Accessories:

a. Channel End Caps: Aluminum alloy 6063-T6, clear anodized 204R1, AA-M10C22A31, Class II.

b. Hardware: Bolts and Nuts shall be hot dipped galvanized.

c. Hold Down Clip Assembly: Aluminum alloy 6063-T6 mill finish.

d. Joint Sleeve Assembly: Aluminum alloy 6061-T6, mill finish.

2.02 MANUFACTURER'S DESIGN CRITERIA

A. Seating assembly designed to support and resist, in addition to own (dead) weight, the following forces in compliance with the BCNYS and ICC-300:

1. Seats and decking to resist a vertical live load of 120 lbs. per linear foot.

2. Uniformly distributed live load of not less than 100 lbs. per square feet of gross horizontal projection.

3. Parallel sway load of 24 lbs. per linear foot of row.

4. Perpendicular sway load of 10 lbs. per linear foot of row.

5. Stair and aisle treads shall resist a minimum concentrated load of 300 lbs. on an area of 4 sq. inches.

B. Guard Railings, Posts, and Supports: Engineered to withstand the following horizontal forces applied separately and in compliance with the BCNYS and ICC-300:

1. Concentrated load of 200 lbs. applied at any point and in any direction along top rail.

2. Uniform load of 50 lbs. per foot applied horizontally at top rail and a simultaneous uniform load of 100 lbs. per foot applied vertically downward.

3. Intermediate rails (except handrail), balusters, and panel fillers shall resist a horizontally applied load of 50 lbs. on an area equal to 1 sq. foot, including openings and space between rails.

C. Risk Category III, Exposure Category B, Wind Load 130 mph per 2015 ICC section 1609.

D. Member Sizes and Connections: Design criteria (current edition) of the following shall be the basis for calculation of member sizes and connections:

1. AISC: Manual of Steel Construction.

2. AISI: Specification for Design of Cold Rolled Steel Structural Members.

3. AA: Specification for Aluminum Structures.

E. All manufactured connections to be shop welded.

1. Manufactured by certified welders conforming to AWS Standards.

PART 3 – EXECUTION

3.01 BLEACHER INSTALLATION

A. All work shall be performed by technicians experienced in similar steel and aluminum bleacher installations.

B. Installation shall be as per approved shop drawings.

C. Installers must be certified by the grandstand manufacturer.

D. Coordinate construction with the required controlled inspections and special inspections in accordance with section 014523.

E. Connect grandstand downspouts to storm water collection system, if applicable.

3.02 CLEAN UP

A. Clean up all debris caused by work of this section.

B. Remove and dispose of excess soil.

C. Re-grade, rake and level the surrounding soil disturbed by this work.

D. Restore surrounding areas with topsoil & seed.

END OF SECTION

DIVISION 13 – SPECIAL CONSTRUCTION

SECTION 133423.11 – PREFABRICATED PRESS BOX

PART 1 - GENERAL

1.01 GENERAL

A. All applicable provisions of the Conditions of the Contract shall govern all work under this section.

1.02 SCOPE

A. Provide all labor, materials, equipment, and services, and perform all operations required to complete the installation of all work of this section and related work as indicated on the drawings and specified herein, including, but not necessarily limited to, the following:

1. Design, fabrication, and erection of the prefabricated, non-combustible press box as shown on the drawings. Building shall be installed on galvanized structural steel framing and include necessary structural framing (whether detailed on the drawings or not), film deck (roof), sidewall and roof coverings, fascia and soffits, interior prefinished walls, floor finishes, all fasteners, sealants, caulking, insulation, flashing, gutters, and downspouts, all as indicated on the drawings and herein specified as required to provide a weather tight structure in accordance with applicable codes.

2. The prefabricated press box building shall be located and in the general configuration as shown on the drawings. The building shall consist of the following: three space broadcast module 8' wide by 18' long by 9'-0" +/- high, completely assembled including, but not limited to, platforms, stairs, roof, walls, and floor systems finished and equipped as required. Finish materials for sealing joints at the connection point shall be furnished and installed in keeping with the theme of relocatability. The work shall also include providing & installing galvanized structural steel framing and bracing to accommodate the new structure and modifications to existing grandstand to provide access to the press box, if new a grandstand is not part of the project.

3. The unit shall be inspected and approved by the Architect. The building shall comply with the New York State Uniform Fire Prevention and NYS Building Code, the New York State Energy Conservation Code, the Regulations of the Commissioner of Education, and the National Electrical Code.

   Units shall be manufactured by Sturdisteel, a division of Schultz Industries, Inc., PO Box 2655, Waco, Texas 76702, (800) 433-3116, www.sturdisteel,com or Architect approved equal.

   a. If a grandstand or bleacher seating is required as part of the work, then grandstand and press box must be provided by the same manufacturer for single source responsibility.

1.03 RELATED WORK

A. Related work specified under other sections of the specifications:

1. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

2. Division 31, 32 &33 sections for site work, if applicable.

3. Division 03 sections for concrete foundations.

4. Section 133416.13 – Grandstands

    a. If a grandstand is required as part of the work, then grandstand and press box must be provided by the same manufacturer for single source responsibility.

5. Division 26, 27 & 28 Sections for electrical work.

1.04 DESIGN CRITERIA

A. The basic design criteria for buildings and their components specified herein shall conform to the applicable provisions of the following accepted and approved design standards:

1.	AISC	"Steel Construction Manual"
2.	AISI	"Light Gauge Cold Formed Steel Manual" "Sectional Properties of Corrugated Steel Sheets"
3.	American Welding Society	"Code for Arc and Gas Welding"
4.	Manufacturers' Associates	"Recommended Design Practices Manual"
5.	ASTM	"Book of ASTM Standards"; Vol. 1 through 11 as applicable
	a. ASTM A36	Specification for Structural Steel
	b. ASTM A123	Specification for Zinc (Hot Dip Galvanized Coatings and Iron and Steel Products)
	c. ASTM 307	Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile.

B. The prefabricated press box shall be designed and fabricated to meet or exceed all the applicable requirements of the Building Code of New York State.

1.05 DRAWINGS AN SUBMITTALS

A. Before any work is started, the Contractor shall submit the following drawings in triplicate to the Owner for approval or correction:

1. Foundation plan and pier locations.

2. Structural steel framing plan signed & sealed by a Professional Engineer licensed in the state where the project is located.

3. Complete shop drawings of the prefabricated building including design calculations signed and sealed by a Registered Architect or Professional Engineer licensed in the state where the project is located.

B. All fabrication drawings must be reviewed and approved by the New York Department of State and must bear the seal of the Department of State prior to manufacture. See application behind this section.

1.06 WARRANTY AND GUARANTEES

A. All buildings shall be delivered, erected on steel frames and concrete foundations, and finished complete and ready for occupancy by the manufacturer. The manufacturer shall warranty its buildings against defective workmanship and materials for a period of (5) five years from date of acceptance by the Owner. Guarantee to include labor and materials to correct any deficiencies.

1.07 MANUFACTURER'S CERTIFICATION

A. Installation of units shall be by an approved installer certified by the manufacturing company.

B. Manufacturer Qualifications: Minimum 10 years under current ownership and experience in the design and manufacture of press boxes.

C. Units shall be certified as having met or exceeded the New York State Building Code by the modular unit manufacturer prior to shipment. All fabrication drawings shall be signed and sealed by a New York State Licensed Professional Engineer.

D. All fabrication drawings must be reviewed and approved by the New York Department of State and must bear the seal of the Department of State prior to manufacture. See application behind this section. This application must be completed and submitted by the General Contractor (GC) to the Codes Division of New York State. The GC shall be responsible to pay all associated filing and review fees.

PART 2 – FABRICATION

2.01 GENERAL

A. Provide pre-assembled, non-combustible press box fabricated from low maintenance, lightweight, corrosive resistant aluminum (factory fabricated) and finished with a Duronodic Kynar Paint, color to be selected by Owner.

2.02 ASSEMBLY

A. The manufacturer shall deliver, erect, and provide a completed installation in accordance with a previously approved set of design drawings and these specifications and drawings. This shall include all work to prepare the site for the new structure.

2.03 DIMENSIONS

A. 8’ wide x 18’ long and 108” outside height with 6’ landings on each side.

2.04 FRAME CONSTRUCTION

A. Structural Shapes meet ASTM specifications: A36, A36/A572 GR 50, or A529-50.

B. Shop Connections are welded.

C. After fabrication, all steel is hot-dipped galvanized to ASTM A123. (Powder Coated steel is not acceptable for a protective finish for this project).

2.05 BASE/FLOOR

A. Base Sub-floor shall be galvanized steel frame consisting of C10x15.3 channels at front and rear running the entire length of press box with W10x12 beam cross members bolted at 6’-0” on center and 26 ga. belly pan.

B. Floor to be interlocking aluminum deck system, extruded aluminum alloy 6063-T6, attached with mechanical fasteners to the galvanized steel floor frame. Tongue and Groove and standard extrusions are not acceptable.

C. Insulation: Kraft faced fiberglass building insulation R-19 (or better), 6” thick in floor, batt or roll as manufactured by Owens-Corning Fiberglass Corp. or equal.

2.06 WALL PANELS

A. Walls shall be framed with 4”x4”x11 ga steel square tubing and 4”x4”x14 ga steel cees at 24” centers.

B. Exterior siding shall be 26 ga pre-finished steel rib R panel by MBCI, Inc. over 5/8” exterior grade fire rated plywood. Color to be selected from manufacturer’s range of standard colors

C. Tyvek homewarp weather barrier membrane over the exterior grade fire rated plywood.

D. Kraft faced fiberglass building insulation R-13 (or better), 3.5” thick in walls, batt or roll as manufactured by Owen-Corning Fiberglass Corp.

E. Interior Finish: interior paneling shall be 5/8” vinyl surfaced gypsum, Durasan Brand, color: Harvest Cotton.

F. Cover base: Vinyl 4 inch x .08 w/ traditional toe based profile.

2.07 CEILING

A. Interior ceiling shall be foam core panel system providing a smooth flat interior. This is constructed from 24 gauge pre-finished white steel with expanded polystyrene core over 5/8” gypsum board substrate.

B. Ceiling height shall be 8’-0” minimum finished height.

2.08 ROOF

A. Roof joists shall be 4” x 4” x 11 GA square tubing at 6’-0” centers maximum and 4” x 2 ½” x 14 GA steel cees at 18” centers maximum.

B. Roof decking 1/8” smooth steel plate roof, continuous welded seams and coated with acrylic metal primer. Roofing shall be minimum 36 mils of white elastomeric roof coating.

C. Roof Trim: 26 GA steel trim pre-finished to match siding by MBCI, Inc.

D. Ceiling shall be exposed metal "T" grid system with High Humidity and Sag Resistant 24 x 24 x 5/8 acoustical tile manufactured by CertainTeed® item HHF-157 Fine Fissured, Performance Series Mineral Fiber Ceilings. Color is White.

E. Kraft faced fiberglass building insulation R19 (or better), 6" thick in ceiling, batt or roll as manufactured by Owens-Corning Fiberglass Corp. or equal. And provide R11 liner to below the batt or roll.

2.09 WINDOWS AND PAINTING

A. Four (4) double hung windows white framed vinyl windows, double glazed with tempered glass: Legacy 450 series advanced performance vertical single sliding type, with tilt-in sash.

B. Exterior siding & trim: MBCI, Inc. Signature 200 or 300 Series
   a. Primer: Factory applied.
   b. Finish: factory applied, touch up as needed.

C. Caulking: Sonneborn NP1 – Polyurethane sealant, all temperature, UV resistant, or equal. Silicone products are not acceptable.

2.10 DOORS, WINDOWS, AND FINISH HARDWARE

A. Exterior doors shall be 3'-0"x6'-8" steel insulated hollow metal door with steel frames, aluminum threshold and weatherstripping. Color to be white.

1. Completely weather-stripped including threshold at exterior exit.

2. Hardware to be equal to Yale 4607LN (4600 series), dull chromium plated US 26D, lever handle keyed alike.

2.11 ELECTRICAL

A. Electric All work shall meet National Electrical Code and all components to be UL listed.

B. 240v/140v, 1 phase, 100 amp main breaker with a minimum of 20 spaces, Square D Homeline or equal. Flush mounted inside press box with 1 ½" conduit stub out through floor for service line to be supplied and connected by others.

C. 120v, 15A single duplex electrical outlets one every 8'-0", 18" above floor on front and back walls.

D. Wiring throughout to be pre-wired using type MC cable

E. Sound, Telephone, Clock, Field Communication: Empty single or double outlet boxes (as required) per N.E.C. with ¾ inch conduit stubbed out the bottom of the press box for use of owner. Outlet boxes shall be flush mounted into the wall.

F. Provide in each of the rooms and emergency combination exit/flood light with battery back-up. Also provide exterior emergency lights with remote heads.

G. Provide fire extinguishers at the exit door(s).

H. Filming platform, weathertight outlet box for cameras, quantity to be two.

2.12 LIGHTING

A. Lighting shall be a twin fluorescent lamps with vandal resistant Lexan tube cover and cold start ballast.

2.13 HEATING AND COOLING

A. Heating shall be baseboard mounted electric with thermostat in an enamel coated 20-gauge steel cabinet. Provide (2) at each compartment. Qmark Commercial or equivalent.

B. Cooling shall be a wall mounted mini-split combo system as recommended by the manufacturer.

2.14 ROOF FILMING DECK

A. Heating Hatch: Bilco Model NB50 2'6"x4'6".

B. Ladder: Aluminum 60 degree ladder.

C. Roof Guardrailing: 42” above walking surface around perimeter of the deck attached to galvanized steel brackets welded to the roof structure. Guardrail to be powder coated aluminum picket rails to match the grandstand. Also provide railing around roof hatch opening.

D. Mini-Jomi escape ladder from roof to press box landing.

2.15 STRUCTURAL LOADING REQUIREMENTS

A. Floor System

1. Floor system shall be capable of supporting a minimum of 60 PSF live load and have a deflection limited to L/280.

B. Wall System

1. Structural system shall be capable of withstanding a 120-mph wind load.

2. Wall systems shall be capable of resisting a laterally applied wind load of 35 psf.

C. Roof System

1. Roof system shall be capable of supporting a minimum of 100 PSF uniformly distributed lived load and resisting 17-psf-wind uplift, supporting a snow load of 45 PSF and a dead load of 65 PSF.

2.16 MISCELLANEOUS ACCESSORIES:

A. The press box shall come equipped with the following accessories:

1. Full camera roof deck with 42” H. vinyl coated CLF fence surround.

2. One (1) 4’ x 4’ vinyl coated tack board with aluminum frame.

3. One (1) 4’ x 4’ dry marker board with aluminum frame and chalk tray.

4. Two (2) outlets for scoreboard controller, unit to be provided by Owner.

5. Two (2) PA outlet jacks.

6. Two (2) modular phone jacks.

7. Three (3) GFI duplex outlet receptacles.

8. Three (3) fluorescent light fixtures.

9. One (1) emergency exit light fixture.

10. Additional power and lighting devices as shown on the electrical drawings.

11. 20” deep full length aluminum work bench, counter height 32” above floor with galvanized steel angle supports.

12. All life safety devices & equipment as called out on the press box floor plan.

13. Two (2) CAT 6 modular outlets for data.

PART 3 – EXECUTION

3.01 FOUNDATION

A. Install new foundations, spread footings, and piers in accordance with the construction drawings, shop drawings and Division 3 concrete and reinforcement specifications.

   1. The design of the foundations is per the construction drawings, which are based upon the soil conditions, and may be modified only for slight dimensional requirements of the press box.

B. All anchor bolts and base, bearing, and leveling plates shall be hot dip galvanized (G90) and of sizes and dimensions indicated on the shop drawings.

   1. The design of these items is the responsibility of the press box manufacturer as part of their system assembly.

3.02 PRESS BOX INSTALLATION

A. All work shall be performed by technicians experienced in similar installations.
B. Installation shall be as per approved shop drawings.

C. Installers must be certified by the press box manufacturer.

D. Prefabricated press box structure shall be placed on and secured to new structural steel frame.

E. Press box shall be secured to resist 120 mph wind loading. Contractor to provide connection details for approval by Engineer.

F. Coordinate construction with the required controlled inspections and special inspections in accordance with section 014523.

3.03 CLEAN UP

A. Clean up all debris and packaging caused by work of this section.

B. Clean all interior and exterior surfaces after completion.

C. Remove and dispose of excess soil.

D. Re-grade, rake and level the surrounding soil disturbed by this work.

E. Restore surround areas with topsoil & seed.

END OF SECTION

DIVISION 31 – EARTHWORK

SECTION 310000 – EARTHWORK

PART 1 - GENERAL

1.01 GENERAL

A. Applicable provisions of the "Conditions of the Contract" shall govern all work under this section.

B. Contractor must observe and adhere to New York Code, 6 NYCRR, Chapter IV and all applicable Subchapters and Parts for the receipt of, or removal, transport, tracking and disposal of all soils and construction waste and debris, as enforced by the New York State Department of Environmental Conservation. All fees associated with testing of materials and debris either at the point of origin (site) or point of termination, are to be borne by the Contractor.

C. Related Documents:

1. Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and sections in Division 01 of these Specifications.
2. Section 033000 – Cast-In-Place Concrete
3. Section 310001 – Site Work General Provisions
4. Section 312500 – Erosion and Sediment Controls
5. Section 320117 – Pavement Repair and Resurfacing
6. Section 321216 – Asphalt Paving
7. Section 321216.11 – Asphalt Overlay
8. Section 334000 – Storm Drainage Utilities
9. Other Division 31, 32 & 33 Sections related to the work of the Contract as applicable.

1.02 SCOPE/SUMMARY

A. Provide all labor, materials, equipment, and services and perform all operations required to complete the installation of all work of this section and related work as indicated on the drawings and specified herein, including, but not limited to, the following:

1. Erect and maintain barriers in accordance with all local municipal and state requirements.

2. Remove all obstructions in the way of new construction work which may be required in addition to clearing and removal work specified under Section 310001 – Site Work General Provisions.

3. Excavation and preparation of sub grade for building slabs, floor slabs, depressions and pits, foundations, interior and exterior column footings, walks, stairs, ramps, and pavements. All other excavation which may be required to complete the work and is not specified under other sections.

4. Shoring, sheathing, and pumping.

5. Backfilling all work within building lines to the required grades.

6. Granular fill course for support building slabs is included as part of this work.

7. Excavating and backfilling of trenches within building lines.

8. Excavating and backfilling for underground mechanical and electrical utilities and buried mechanical and electrical appurtenances, transformer pads, and conduits for same, underfloor

utility lines, etc. inside or outside of the building footprint.

9. Filling and grading.

10. Finish grading of sub grade.

11. Finished grades.

B. Final grading, together with placement and preparation of topsoil for lawns and planting, is specified elsewhere in Division 32 - Exterior Improvements.

1.03 DEFINITIONS

A. Excavation consists of removal of material encountered to subgrade elevations indicated or required by the work and subsequent disposal of materials removed. Materials to be excavated shall be non-classified and shall include all rock, earth, or other materials encountered in excavating and grading operations for building or site work. The contract price covers the removal of all such materials to the depth and extent indicated on the drawings specified herein or as required to perform the work.

B. Unauthorized excavation consists of removal of materials beyond required sub grade elevations or dimensions without specific direction of the Soils Engineer. Unauthorized excavation, as well as remedial work directed by the Soils Engineer, shall be at the Contractor's expense.

1. Under footings, foundation bases, or retaining walls, fill unauthorized excavation with compacted controlled structural fill material or by extending the indicated bottom elevation of the footing or base to the excavation bottom, without altering the required top elevation.

2. In locations other that those above, backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by Construction Manager (when applicable), Architect or the Soils Engineer.

C. Additional Excavation: When excavation has reached required subgrade elevations, notify the Architect/Engineer, who will make an inspection of conditions. If Architect/Engineer (based upon Soils Engineer's reports) determines that bearing materials at required subgrade elevations are unsuitable, continue excavation until suitable bearing materials are encountered and replace excavated material as directed by the Soils Engineer.

1. Removal of unidentified unsuitable materials and its replacement beyond the limits required for the construction work as directed will be paid on basis of Conditions of the Contract relative to changes in the work.

D. Sub grade: The undisturbed earth or the compacted soil layer immediately below granular subbase, drainage fill, or topsoil materials.

E. Fill is that material removed from excavations or imported from off site borrow areas, predominantly granular, non-expansive soils free from roots and other deleterious matter. Fill material is subject to approval.

F. Structure: Buildings, foundations, slabs, tanks, curbs, or other man-made stationary features occurring above or below ground surface.

1.04 SUBMITTALS

A. Test Reports: The Contractor shall submit the following reports directly to the Construction Manager (if applicable), the Owner, and the Architect:

1. Test reports on borrow material.

2. Verification of suitability of each footing subgrade material, in accordance with specified requirements including substantiation of and structural capacity of existing rock on which new footings are to bear.

3. Field reports; in-place soil density tests.

4. One optimum moisture-maximum density curve for each type of soil encountered.

5. Report of actual unconfined compressive strength and/or results of bearing tests of each strata tested.

1.05 QUALITY ASSURANCE

A. Codes and Standards: Perform excavation work in compliance with applicable requirements of authorities having jurisdiction.

B. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

C. Use equipment adequate in size, capacity, and numbers to accomplish the work of this section in a timely manner.

D. Engineering, Testing, and Inspection Services: The Contractor shall make arrangements for and the Owner shall pay for a qualified independent geotechnical testing laboratory and associated soil engineer (acceptable to the Owner) to perform soil survey and soil testing service for sampling and testing of materials proposed to be used as well as substantiation and verification of existing subsurface conditions when desired depths of excavation are reached. The Contractor will be responsible for all costs associated with failed tests resulting from their work.

E. Testing Laboratory Qualifications: To qualify for acceptance, the geotechnical testing laboratory and associated soils engineer must demonstrate to the Owner's satisfaction, based on evaluation of laboratory-submitted criteria conforming to ASTM E 699, that it has the experience and capability to conduct required field and laboratory geotechnical testing without delaying the progress of the work.

1.06 SOILS ENGINEER (SERVICES AS EMPLOYED AND PAID BY THE OWNER)

A. For site conditions without complex soil problems, a registered soils engineer shall be engaged to perform the following minimum services:

1. Examine on-site materials to determine suitability for use.

2. Recommend locations for placing on-site materials.

3. Recommendations for compacting on-site materials.

4. Determine suitability of soil under footings, foundations.

5. Perform compaction tests and supervise filling operations.

B. Soils engineer's services for problem site conditions shall include the above and the following additional work at minimum:

1. Determine extent of unsuitable material removal.

2. Testing of materials proposed for use from off-site and on-site sources.

3. Dewatering recommendations.

4. Supervising the placing and compacting of approved materials and under footings, foundations, slabs, utility lines, and paved areas.

5. Supervising environmental protection procedures as required by Federal, State, and Municipal Agencies.

   NOTE: Copies of soils reports prepared by soils engineer are to be sent to the Owner, the Architect, and Construction Manager (if applicable).

1.07 PROJECT CONDITIONS

A. Site Information: Data in subsurface investigation reports were used for the basis of the design and are available to the Contractor for information only. Conditions are not intended as representations or warranties of accuracy or continuity between soil borings. The Construction Manager, The Architect, and the Owner will not be responsible for interpretations or conclusions drawn from these data by the Contractor.

   1. Additional test borings and other exploratory operations may be performed by the Contractor, at the Contractor's option; however, no change in the Contract Sum will be authorized for such additional exploration.

B. Examine the areas and conditions under which the work of this section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

C. Set all lines, elevations, and grades for utility and drainage system work and control system for duration of work, including careful maintenance of bench marks, property corners, monuments, or other reference points.

D. Existing Utilities: Locate existing underground utilities in areas of excavation work. This work to be substantiated and paid by this Contractor. If utilities are indicated to remain in place, provide adequate means of support and protection during earthwork operations. If damaged, repair or replace at no additional cost to the Owner.

   1. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with the Owner, the Construction Manager (if applicable) and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.

   2. Do not interrupt existing utilities service facilities occupied by the School or others, during occupied hours, except when permitted in writing by Architect/Engineer and then only after acceptable temporary utility services have been provided.

   3. Provide minimum 48-hour notice to the Construction Manager (when applicable), Architect, and Owner, and receive written notice to proceed before interrupting any utility.

   4. If service is interrupted as a result of work under this section, immediately restore service by repairing the damaged utility at no additional cost to the Owner.

5. If existing utilities are found to interfere with the permanent facilities being constructed under this section, immediately notify the Architect and secure his instructions.

6. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies for shutoff of services if lines are active.

E. Use of Explosives: Use of explosives is permitted for certain types of rock removal only but that use must be substantiated with the Owner, Architect/Engineer, State, and Local Agencies prior to bidding and again prior to commencement of work.

1. The use of explosives is only permitted when the Owner has been notified of same by written notice of the Contractor through Architect/Engineer, thereby permitting the Owner and its surrounding neighbors the required legal notices to vacate and/or protect their properties, buildings, homes, or premises as needed.

F. Protection of Persons and Property: Barricade open excavations occurring as part of this work and post with warning lights.

1. Operate warning lights as recommended by authorities having jurisdiction.

2. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

3. Provide all protective measures necessary for the safety of workmen. The above shall be carried out in accordance with and in compliance with regulations of local, county, federal, and OSHA authorities having jurisdiction over same. Protection is entirely the responsibility of the Contractor.

4. The work shall be executed so that no damage or injury will occur to the Owner's property or building, to public and adjoining or adjacent structures, streets, paving, sewers, gas, water, electric, or any other pipes. Should any damage or injury caused by the Contractor or anyone in his employ, or by the work under this Contract occur, the Contractor shall, at his expense, make good such damage and assume all responsibility for such injury.

5. The above shall also include the protection of all existing sewers and drainage systems to remain in use within the area affected by the work of this project.

6. Monuments, benchmarks, and other reference features on streets bounding this project shall be protected. Should these be disturbed in any manner, the Contractor shall have them replaced.

7. Use every means necessary to prevent dust from becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site.

8. Maintain access to adjacent areas at all times.

G. The Contractor is to acquaint himself with the existence and location of all surface and subsurface structures and utilities within the project area. He is not to damage any of those that are to remain, and he is to leave them accessible and make the necessary provisions by sheeting, hanging, supporting, or other means necessary to obtain this result, subject to the approval of Architect/Engineer, the local municipality, the utility company involved, and any other agencies having jurisdiction over this project.

H. Prior to entering his bid, the Contractor shall visit the site and familiarize himself with all existing conditions. All nearby existing buildings and utilities shall be inspected by the Contractor prior to

entering his bid.

I. Borings were prepared by others, and provided by the Owner. The Geotechnical Report contained herein shall be reviewed prior to bid. The documents are for information only. Contractor shall interpret for themselves the soil condition underlying the surface of the ground.

J. Perform excavation by hand within dripline of large trees to remain. Protect root systems from damage or dryout to the greatest extent possible. Maintain moist condition for root system and cover exposed roots with moistened burlap.

PART 2 - PRODUCTS

2.01 SOIL MATERIALS

A. Satisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups GW, GP, GM, SM, SW, and SP.

B. Unsatisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups CG, SC, ML, MH, CL, CH, OL, OH, and PT.

C. Granular Fill: Naturally or artificially graded mixture or natural or crushed gravel, crushed stone, crushed slag, and natural or crushed sand meeting requirements for New York State Department of Transportation Standard Specification 304.2.02, Type 4 unless otherwise indicated.

D. Subbase Material: Graded mixture of crushed rock, with 100 percent passing a 2-inch sieve and meeting requirements for New York State Department of Transportation Standard Specification 3.04-2.02, Type 2, unless otherwise indicated.

E. Backfill and Fill Materials: Satisfactory non-expansive soil materials free of organic material, roots, other deleterious substances, clay, rock or gravel larger than 2 inches in any dimension, debris, waste and frozen materials.

2.02 CONTROLLED STRUCTURAL FILL OR MATERIAL

A. Imported controlled structural fill shall consist of inert material that is hard, durable stone and coarse sand, practically free from silts, clay, frozen sections, and foreign substances. It may consist of either natural or washed soil and must be free of organics. The material shall be a well graded mixture, shall have no material larger than 4", and must have the following gradations by weight:

Maximum retained on 3/4-inch sieve:	30%.
Maximum retained on No. 4 sieve:	50%.
Maximum passing 100 sieve:	25%.
Maximum passing 200 sieve:	5%.

This grading shall be determined in accordance with ASTM Standard Specification C117 and C136.

2.03 SUB BASE FILL OR MATERIAL

A. Sub base fill shall consist of inert material that is clean, hard, durable stone, sand, and non-plastic silt completely free from clays, frozen sections, and foreign substances. It may consist of either natural or washed soil and must be free of organics. The sub base fill shall be a well graded mixture, shall have material not larger than 2 inches, and must comply with the following grain size gradation by weight:

Maximum passing No. 100 sieve: 35%.
Maximum passing No. 200 sieve: 25%.

This grading shall be determined in accordance with ASTM Standard Specification C117 and C136.

2.04 WEED KILLER

A. Provide a dry, free-flowing, dust-free chemical compound, soluble in water, capable of inhibiting growth of vegetation, and approved for use on this work by governmental agencies having jurisdiction.

2.05 TOPSOIL

A. Where and if shown on the drawings or otherwise required, provide topsoil consisting of friable, fertile soil of loamy character, containing an amount of organic matter normal to the region, capable of sustaining healthy plant life, and reasonably free from subsoil, roots, heavy or stiff clay, stones, noxious weeds, sticks, brush, litter, and other deleterious matter.

B. Obtain topsoil from sources within the project limits, or provide imported topsoil obtained from sources outside the project limits, or from both sources. Stockpiled topsoil may be used, provided it meets the requirements of these specifications. Additional topsoil from certified off-site sources shall be used, provided it meets the requirements of these specifications. Topsoil for lawn and planting operations shall be fertile, friable, natural loam containing a liberal amount of humus. It shall be free of admixtures and subsoil and shall be reasonably free of noxious weed, seed, lumps, plants, or their roots, and completely free of stones, sticks, and other extraneous matter, and shall not be used for planting operations while in a frozen or muddy condition. After spreading to a uniform depth of 6” minimum, all topsoil shall be raked to remove all extraneous matter. Raked topsoil shall conform to the mechanical analysis specified below and shall be free of stones, lumps, plants or their roots, sticks and similar debris, or any other undesirable material. Topsoil shall not be used in a muddy or frozen condition.

1. All topsoil to be furnished shall be subject to the approval of the Architect. Furnish a certified analysis, made by a recognized authority, of any topsoil that may have to be furnished to complete the work of this section. Test reports shall match the format listed below.

2. Topsoil shall have an acidity range of pH 5.0 to 7.0 and shall contain not less than 6 percent organic matter as determined by loss on ignition of moisture-free samples dried at 100 degrees centigrade. The mechanical analysis of the soil shall be as follows:

Passing	Retained On	Percentage
1" screen		100%
1" screen	¼" screen (gravel)	Not more than 3%
¼" screen	No. 100 USS mesh sieve (sand)	40%-60%
#100 USS	(Very fine sand, silt & clay)	40%-60%

3. Topsoil in which more than 60 percent of the material passing the USS No. 100 mesh sieve consists of clay as determined by the hydrometer or by the decantation method, shall not be used. All percentages are to be based on dry weight samples. The chemical and mechanical analysis shall state the above items in correct quantities.

4. The Architect reserves the right to take samples of the topsoil from time to time, whether delivered to or stored at the site. These samples will be analyzed for comparison with the Specifications. Should tests show that topsoil does not comply with the Specifications, the material may be rejected or such other remedy made as approved by the Architect in the form of the addition of humus or other supplemental materials.

5. The topsoil mixture materials shall be thoroughly mixed by hand or by rotary mixer to the satisfaction of the Architect.

2.06 OTHER MATERIALS

A. Provide other materials, not specifically described, but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 EXCAVATION

A. Excavation Classifications: The following classifications of excavation will be made when rock is encountered:

1. Earth Excavation includes excavation of pavements and other obstructions visible on surface; underground structures, utilities, and other items indicated to be demolished and removed; together with earth and other materials encountered that are not classified as rock or unauthorized excavation.

2. Rock excavation for trenches and pits includes removal and disposal of materials and obstructions encountered that cannot be excavated with a track-mounted power excavator, equivalent to Caterpillar Model No. 215C LC, and rated at not less than 115 HP flywheel power and 32,000-pound drawbar pull and equipped with a short stick and a 42-inch wide, short tip radius rock bucket rated at 0.81 cubic yard (heaped) capacity.

3. Trenches in excess of 10 feet in width and pits in excess of 30 feet in either length or width are classified as open excavation.

4. Rock excavation in open excavations includes removal and disposal of materials and obstructions encountered that cannot be dislodged and excavated with modern, track-mounted, heavy-duty excavating equipment without drilling, blasting, or ripping. Rock excavation equipment is defined as Caterpillar Model No. 973 or equivalent track-mounted loader, rated at not less than 210 HP flywheel power and developing minimum of 45,000 pound breakout force (measured in accordance with SAE J732).

    a. Typical materials classified as rock are boulders 1/2 cu. yd. or more in volume, solid rock, rock in ledges, and rock-hard cementitious aggregate deposits.
    b. Intermittent drilling, blasting, or ripping performed to increase production and not necessary to permit excavation of material encountered will be classified as earth excavation.

5. Rock Excavation:

    a. In the event that rock is encountered and is of a type that cannot be broken up and excavated by machine or moved into deep fill areas, blast as necessary, and remove and dispose of same off site.

    b. Rock that can be broken up, excavated by machine, and/or moved into deep fill areas shall be reduced to a size not exceeding 6" prior to depositing in deep fill areas.

    c. Definition: Whenever the word "removal" is used in connection with rock, it is to be construed to mean "blasting, excavating, and the removal of rock that cannot be broken up by machine and removed", as defined previously.

        1) As this facility is in session daily Monday through Friday and its surrounding neighbors

are contiguous, the preferred methodology of excavation and removal of rock is to be construed as "passive" in nature--meaning "drilling or any other passive means". The excavation contractor shall coordinate his/her work with the Owner's representative so as to perform that work with the least disruption to the Owner and the Owner's neighbors and with maximum intent to the safety of same. The preferred time of rock removal work shall take place when the Owner's facilities are vacated, thereby meaning after the close of school each day or on weekends, as long as these times are permitted by all State and Local Ordinances and are acceptable and coordinated with the School and its neighbors.

d. Blasting shall conform strictly to all local and state laws, rules, and regulations applying thereto, and shall avoid excess noise and vibration. Steel mats shall be provided where necessary to prevent damage from flying fragments. Drill holes shall not be carried any further than necessary to remove the rock desired. The care, handling, and storing of explosives shall conform strictly to all local and state laws, rules, and regulations applying thereto. After concrete is set in place, no blasting shall be done except with the written permission of the Owner, and Architect.

e. The Contractor may consider the utilization of "Super Bristar 2000", a non-explosive demolition agent as a means of rock removal for this project.

f. General:

    1) Blasting shall be done as necessary for breaking rock for removal to depths, limits, and extent required for the construction of the building, site grading, and utility lines.

    2) Blasting shall be performed only by experienced, competent, licensed personnel under the direct supervision of an experienced, competent, licensed foreman.

g. Precautions:

    1) Blasting shall be permitted only when proper and adequate precautions have been taken for the protection of personnel, work, and property.

    2) Caps, fuses, and other exploders shall in no case be stored in the same place in which explosives are stored.

    3) All operations involving delivery, handling, storage, and the use of explosives shall be conducted in accordance with applicable laws, statutes, and regulations of the State, Municipal, or other governing bodies having jurisdiction. Likewise, the blasting contractor shall secure and pay for all necessary permits on behalf of the excavation contractor/contractor and shall provide same to the Owner, and Architect prior to scheduling the work. Open rock and rock in trenches shall be removed to a depth of 8" below required grades.

h. Do not perform rock excavation work until material to be excavated has been cross sectioned and classified by the Contractor's qualified independent geotechnical testing laboratory and associated soils engineer (employed and paid by the Contractor), and as approved by Architect/Engineer.

i. Rock payment lines are limited to the following:

    1) Three feet outside of concrete work for which forms are required, except footings.

    2) Two feet outside perimeter of footings.

3) In pipe trenches, 6 inches below invert elevation of pipe and 2 feet wider than inside diameter of pipe, but not less than 3 feet minimum trench width.

4) Outside dimensions of concrete work where no forms are required.

5) To bottom of all footings which, as designed, are minimum 1'-8" below finished floor and are to bear on undisturbed rock of 8 T.S.F. bearing capacity minimum. This capacity to be verified by Contractor's geotechnical testing laboratory and associated soils engineer.

6) Under slabs on grade, 6 inches below bottom of concrete slab.

7) Work indicated herein under these rock payment lines is part of this Contractor's base bid.

3.02 STABILITY OF EXCAVATIONS

A. General: Comply with local codes, ordinances, and requirements of agencies having jurisdiction.

B. The Contractor shall safely support and maintain adjacent and abutting property and structures and shall maintain the work safe to life, limb, and property.

C. Barriers, sheet piling, bracing, and the like shall be installed where required to maintain the excavation and the banks in a safe and stable condition.

D. Provide sheeting and bracing, when necessary, in trenches and other excavations where protection of workmen is required. Sheeting may be removed after sufficient backfilling to protect against damaging or injurious caving.

E. Slope sides of excavations to 1:1 or flatter or to comply with local codes, ordinances, and requirements of agencies having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated. Maintain sides and slopes of excavations in safe condition until completion of backfilling.

F. Shoring and bracing: Provide materials for shoring and bracing, such as sheet piling, uprights, stringers, and cross braces, in good serviceable condition. Maintain shoring and bracing in excavations regardless of time period excavations will be open. Extend shoring and bracing as excavation progresses.

G. All temporary sheet piling, bracing, shoring, and other protective work shall be removed after the necessity for same ceases to exist, in the opinion of the Architect, and before backfilling.

H. All work removed or damaged through the installation or removal of the temporary protective work or through improper protection work shall be replaced or repaired in an approved manner at no cost to the Owner.

I. Maintain excavations free from detrimental quantities of leaves, sticks, trash, and other debris until completion of the work.

3.03 DEWATERING

A. Prevent surface water and subsurface or groundwater from flowing into excavations and from flooding project site and surrounding area.

1. Do not allow water to accumulate in excavations. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrades and foundations. Provide and maintain pumps, well points, sumps, suction and

discharge lines, and other dewatering system components necessary to convey water away from excavations.

2. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rainwater and water removed from excavations to collecting or runoff areas. Do not use trench excavations as temporary drainage ditches.

B. Surrounding soil shall not be disturbed or removed during pumping operations.

C. Water shall be disposed of by pumping to a point directed by the Architect without damage to adjacent property.

D. The Contractor shall provide, operate, and maintain adequate equipment to keep the excavations free from water so that the excavating, concrete work, membrane waterproofing, and all other work in the excavations will be performed in the dry.

E. Excavate and backfill in a manner and sequence that will provide proper drainage at all times.

3.04 STORAGE OF EXCAVATED MATERIALS

A. Stockpile excavated materials acceptable for backfill and fill where directed. Place, grade, and shape stockpiles for proper drainage.

1. Locate and retain soil materials away from edge of excavations. Do not store within drip line of trees indicated to remain.

2. Dispose of excess excavated soil material and materials not acceptable for use as backfill or fill.

3.05 EXCAVATION FOR STRUCTURES

A. Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10 foot, and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, and other construction and for inspection.

B. Contractor shall prepare building and sidewalk areas to underside of floor slab plus or minus 1/2". Under no circumstances shall any material other than approved on-site material, or specified imported controlled structural fill be used for filling within a depth of 10" inches below building and sidewalk slabs on grade or within a depth of 12" beneath all column or wall support footings. Imported controlled structural fill shall also be utilized in all areas supporting earthen or other load carrying structures where organic soil materials are encountered subsequent to the removal of said organic soil materials.

C. Excavations for footings and foundations: Take care not to disturb bottom of excavation. Excavate by hand to final grade just before concrete reinforcement is placed. Trim bottoms to required lines and grades to leave solid base to receive other work. Piers, concrete slabs, and footings shall be benched a minimum of 2" into rock at sloping rock conditions as indicated on the drawings where no excavation is required.

D. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Structures: Conform to elevations and dimensions indicated within a tolerance of plus or minus 0.10 foot; plus a sufficient distance to permit placing and removal of concrete formwork, installation of services, and other construction, and for inspection. Do not disturb bottom of excavations intended for bearing surface.

E. Unsuitable Material: All unsuitable material below the grading plane shall be excavated and removed and the space filled with granular material as specified herein.

1. Unsuitable materials are those soils that exhibit characteristics that make them unsuitable for the direct support of the pavement structure, such as organic silt, elastic clays and silts, topsoil, frost susceptible soils, etc. Unsuitable materials shall be removed to the depth directed by the Soils Engineer and the Construction Manager when applicable.

2. The excavation and disposal of unidentified unsuitable material below the grading plane shall be paid on the basis of the Conditions of the Contract relative to Changes in the Work.

3. The granular fill material will be used in the fill sections within the paving area. No additional payment will be made for placing this material in the fill areas.

F. Unsuitable material will be legally disposed of off site.

3.06 EXCAVATION FOR PAVEMENTS, SLOPES, DITCHES, ETC.

A. The work under this item shall consist of the following in accordance with the plans, specifications, addenda, bid proposal, and requirements herein: excavating for pavement, slopes, ditches, and all other work incidental to the excavation for the pavement, including disposing of unsuitable and surplus material, preparing the subgrade, compaction, grading, slopes and shoulders, and all other work needed to complete the item.

B. Cut surface under pavements to comply with cross sections, elevations, and grades as indicated.

C. Drainage and Site Maintenance: During construction, the site shall be maintained in such condition that it will be adequately drained at all times.

D. Unsuitable Material: All unsuitable material below the grading plane shall be excavated and removed and the space filled with granular material as specified herein.

1. Unsuitable materials are those soils that exhibit characteristics that make them unsuitable for the direct support of the pavement structure, such as organic silt, elastic clays and silts, topsoil, frost susceptible soils, etc. Unsuitable materials shall be removed to the depth directed by the Soils Engineer and the Construction Manager when applicable.

2. The excavation and disposal of unidentified unsuitable material below the grading plane shall be paid on the basis of the Conditions of the Contract relative to Changes in the Work.

3. The granular fill material will be used in the fill sections within the paving area. No additional payment will be made for placing this material in the fill areas.

E. Unsuitable material will be legally disposed of off site.

F. The Contractor shall store topsoil, embankment soils, and other materials, and/or to excavate beyond the limits of the contract and slope easements. The cost of stockpiling and rehandling shall be included in his base bid price.

G. All soils that are classed as suitable for the direct support of the pavement (non-organic and non-frost susceptible soils) shall be scarified to a loose depth of ten (10) inches and recompacted to 95% of the maximum density at the optimum moisture content of the soils determined by ASTM D-1557. The moisture content at the time of compaction shall not be greater than one (1) percent nor less than two (2) percent by weight of dry soil of the optimum moisture content. Dry soils shall be moistened and thoroughly mixed to the required moisture content. Wet soils shall be dried by aerating the required moisture content.

1. The cost of adding moisture, drying, and compaction shall be included in the Contractor's base

bid price.

H. Subgrade in excavated areas for new pavement shall be compacted to the density specified below. Soils not conforming to this density shall be scarified or loosened to a depth of ten (10) inches, water added in the amount necessary, and the material recompacted to provide the required density.

1. Compaction control will be provided as follows: The subgrade in excavated areas shall be compacted to at least ninety-five (95) percent of the maximum density as determined by the "Test for Moisture Density Relations of Soils using a 10 lb. Rammer and 18 inch Drop", ASTM D-1557 as currently revised. Samples of subgrade materials for testing purposed shall be taken at frequent intervals daily. From these tests, corrections and changes in moisture content will be made and compaction continued until required densities are achieved.

I. The Contractor shall check the work under this Item with templates, slope boards, or other devices satisfactory to the Soils Engineer. The completed work shall conform to the plans within the following tolerances.

J. For pavement subgrade, the surface shall vary no more than three-quarter (¾) inch from a ten (10) foot straight edge applied to the surface, and the actual grade of the subgrade shall not vary more than one (1) inch from plan elevation.

3.07 TRENCH EXCAVATION FOR PIPES AND CONDUIT

A. Excavate trenches to uniform width, sufficient wide to provide ample working room and a minimum of 6 to 9 inches of clearance on both side of pipe or conduit.

B. Accurately cut trenches for pipe or conduit that is to be installed to designed elevations and grades to line and grade from 4" below bottom of pipe and to width as specified. Place 4" of bedding material, compact in bottom of trench, and accurately shape to conform to lower portion of pipe barrel. After pipe installation, place select backfill and compact in maximum 6" layers measured loose to the top of the trench.

C. Excavate trenches and conduit to a depth indicated or required to establish indicated slope and invert elevations and to support bottom of pipe or conduit on undisturbed soil. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost lines.

1. Where rock is encountered, carry excavation 6" below required elevation and backfill with a 6" layer of crushed stone or gravel prior to installation of pipe.

2. For pipes or conduit less than 6" in nominal size, and for flat-bottomed, multiple-duct conduit units, do not excavate beyond indicated depths. Hand-excavate bottom cut to accurate elevations and support pipe or conduit on undisturbed soil.

3. For pipes and equipment 6 inches or larger in nominal size, shape bottom of trench to fit bottom of pipe for 90° (bottom 1/4 of the circumference). Fill depressions with tamped sand backfill. At each pipe joint, dig bell holes to relieve pipe bell of loads ensuring continuous bearing of pipe barrel on bearing surface.

4. Where it becomes necessary to excavate beyond the limits of normal excavation lines in order to remove boulders or other interfering objects, backfill the voids remaining after removal of the objects.

5. When the void is below the sub-grade for the utility bedding, use suitable earth materials and compact to the relative density of 95 percent (in accordance with ASTM D698).

6. When the void is in the side of the utility trench or open cut, use suitable earth or sand compacted or consolidated to a relative density of 92 percent (in accordance with ASTM D1557).

7. Remove boulders and other interfering objects, and backfill voids left by such removals, at no additional cost to the Owner.

D. The local utility companies shall be contacted before excavation shall begin. Dig trench at proper width and depth for laying pipe, conduit, or cable. Cut trench banks as nearly vertical as practical and remove stones as necessary to avoid point-bearing. Over excavate wet or unstable soil, if encountered, from trench bottom as necessary to provide suitable base for continuous uniform bedding.

E. All trench excavation side walls greater than 5 feet in depth shall be sloped, shored, sheeted, braced, or otherwise supported by means of the sufficient strength to protect the workmen within them in accordance with the applicable rules and regulations established for construction by the Department of Labor, Occupational Safety and Health Administration (OSHA), and by local ordinances. Lateral travel distance to an exit ladder or steps shall not be greater than 25 feet in trenches 4 feet or deeper.

F. Accurately grade trench bottom to provide uniform bearing and support for each section of pipe on bedding material at every point along entire length, except where necessary to excavate for bell holes, proper sealing of pipe joints, or other required connections. Dig bell holes and depressions for joints after trench bottom has been graded. Dig no deeper, longer, or wider than needed to make joint connection properly.

G. Trench width requirements below the top of the pipe shall not be less than 12" nor more than 18" wider than outside surface of any pipe or conduit that is to be installed to designated elevations and grades. All other trench width requirements for pipe, conduit, or cable shall be at least practical width that will allow for proper compaction of trench backfill.

H. Trench depth requirements measured from finished grade or paved surface shall meet the following requirements or applicable codes and ordinances:

1. Water mains: 50" to top of pipe barrel.

2. Sanitary Sewer: Elevations and grades as indicated on drawings (48" minimum cover).

3. Storm Sewer: Depths, elevations, and grades as shown on drawings.

4. Electrical Conduits: 30" minimum to top of conduit or as required by NEC 300-5, NEC 710-36 codes, or the local utility company requirements, whichever is deeper.

5. TV Conduits: 18" minimum to top of conduit or as required by the local utility company, whichever is deeper.

6. Telephone Conduits: 30" minimum to top of conduit, or as required by the local utility company, whichever is deeper.

7. Gas Mains and Service: 30" minimum to top of pipe, or as required by the local utility company, whichever is deeper.

8. Where utilities are under a concrete structure slab or pavement, the minimum depth need only be sufficient to completely encase the conduit or pipe sleeve, and electrical long-radius rigid metal conduit riser, provided it will not interfere with the structural integrity of the slab or pavement.

9. Where the minimum cover is not provided, encase the pipes in concrete as indicated. Provide concrete with a minimum 28-day compressive strength of 2,500 psi.

I. Excavating for Appurtenances:

1. Excavate for manholes and similar structures to a distance sufficient to leave at least 12" clear between outer surfaces and the embankment or shoring that may be used to hold and protect the banks.

2. Over-depth excavation beyond such appurtenances that has not been directed will be considered unauthorized. Fill with sand, gravel, or lean concrete at no additional cost to the Owner.

3. Dig bell holes and depressions for joints after the trench has been graded. Provide uniform bearing for the pipe on prepared bottom of the trench.

3.08 COLD WEATHER PROTECTION

A. Protect excavation bottoms against freezing when atmospheric temperature is less than 35°F.

3.09 BACKFILL AND FILL

A. All excavations shall be backfilled as promptly as the work permits but not before concrete has attained its full design strength and not until completion of the following:

1. Acceptance of construction below finish grade, including, where applicable, damp-proofing and water-proofing.

2. Inspecting, testing, approving, and recording locations of underground utilities.

3. Removing concrete formwork.

4. Removing shoring and bracing, and backfilling of voids with satisfactory materials.

5. Removing trash and debris within excavated areas.

6. Placement of horizontal bracing on horizontally supported walls.

B. No frozen material shall be used. Backfill shall be placed in uniform horizontal layers of approximately 8" in depth. Each layer shall be moistened during compaction. Compaction shall be done in a manner approved by the Architect and shall be continued until fill is solid and no settlement will occur.

C. When sheeting, shoring, and bracing is removed, all voids shall be filled with sound materials and thoroughly tamped.

D. Backfill operations shall be made to the new surface grades as shown on the drawings.

E. No backfill shall be placed covering other work until after such work has been inspected and approved. Any backfilling placed on earth that has caved in and covered other work before same has been inspected and approved shall be removed when so directed.

F. Excess material, if any, and all rubbish shall be removed from the site or otherwise disposed of as may be directed by the Architect.

G. General: Place soil material in layers to required subgrade elevations, for each area classification

listed below, using materials specified herein.

1. Under grassed areas, use satisfactory excavated or borrow material.

2. Under walk sand pavements, use subbase material.

3. Under steps, use subbase material.

4. Under foundations, use controlled structural fill material.

5. Under building slabs, use granular material or on site sub grade material if determined acceptable by the Architect or Soils Engineer.

6. Under piping, conduit, and equipment, use subbase materials where required over rock bearing surface unless otherwise indicated. Shape excavation bottom to fit bottom 90° of cylinder.

3.10 CONTROLLED STRUCTURAL FILL OR MATERIAL

A. Location: Imported controlled structural fill shall be used when necessary to provide proper soil bearing capacity:

1. Under all proposed buildings and sidewalks and at least 5 feet beyond the limits of the proposed buildings to a depth as required by foundation design where sidewalks are not part of the scope of building work.

2. Under all footings (continuous or spread) to a depth of at least 12 inches, or as required by foundation design.

3. For all load carrying structures which are situated in areas of soft organic soil deposits subsequent to the removal of said soft organic soil deposits.

4. Sand shall be used as bedding for all drainage and sewerage utilities, unless groundwater problems are encountered or anticipated that may require the use of crushed stone.

3.11 SUB BASE FILL OR MATERIAL

A. Location: The subbase fill may be used in all fill areas where controlled structural fills specified for buildings are not required due to soil conditions, as long as the requirements listed in Section 2.03A are met. Under no circumstances shall subbase material be in directed contact with structural support component, or in support of any of the proposed utilities.

B. Backfill trenches with concrete where trench excavations pass with 18" of column or wall footings and that are carried below bottom of such footings or that pass under wall footings. Place concrete to level of bottom of adjacent footing.

1. Concrete is specified in Division 03.

2. Do not backfill trenches until test and inspections have been made and backfilling is authorized by Contracting Officer. Use care in backfilling to avoid damage or displacement of pipe systems.

C. Provide 4" thick concrete base slab support for piping or conduit less than 2'-6" below surface of roadways. After installation and testing of piping or conduit, provide minimum 4" thick encasement (sides and top) of concrete prior to backfilling or placement of roadway subbase.

D. Backfill excavations as promptly as work permits, but not until completion of the following:

1. Acceptance of construction below finish grade including, where applicable, dampproofing, waterproofing, and perimeter insulation.

2. Inspection testing, approval, and recording locations of underground utilities have been performed and recorded.

3. Removal of concrete formwork.

4. Removal of shoring and bracing and backfilling of voids with satisfactory materials. Cut off temporary sheet piling driven below bottom of structures and remove in manner to prevent settlement of the structure or utilities or leave in place if required.

5. Removal of trash and debris from excavation.

6. Permanent or temporary horizontal bracing is in place on horizontally supported walls.

3.12 PLACEMENT AND COMPACTION

A. Ground Surface Preparation: Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow, strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface.

1. When existing ground surface has a density less than that specified under "Compaction" for particular area classification, break up ground surface, pulverize, moisture-condition to optimum moisture content, and compact to required depth and percentage of maximum density.

B. Place backfill and fill materials in layers not more than 8" in loose depth for material compacted by heavy compaction equipment, and not more than 4" in loose depth for material compacted by hand operated tampers.

C. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

D. Place backfill and fill materials evenly adjacent to structure, piping or conduit to required elevations. Prevent wedging action of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping, or conduit to approximately same elevation in each lift.

E. Where the construction includes basement or other underground walls having structural floors over them, do not backfill such walls until the structural floors are in place and have attained sufficient strength to support the walls.

F. Control soil and fill compaction, providing minimum percentage of density specified for each area classification indicated below. Correct improperly compacted areas or lifts as directed if soil density test indicate inadequate compaction.

1. Percentage of Maximum Dry Density Requirements: Compact soil to not less than the following percentages of maximum dry density, in accordance with ASTM D 1557 (Modified Proctor):

a. Under footings, compact subgrade and subbase material to at least 95% maximum dry density.

b. Under structures, building slabs and steps, and pavements, compact top 12” of subgrade and each layer of backfill or fill material to at least 95% maximum dry density.

c. Under lawn or unpaved areas, compact top 6" of subgrade and each layer of backfill or fill material to a MAXIMUM of 85% maximum dry density.

d. Under synthetic turf, compact top 6" of subgrade and each layer of backfill or fill material to at least 90% maximum dry density.

e. Under walkways, compact top 6" of subgrade and each layer of backfill or fill material to at least 95% maximum dry density.

G. Moisture Control:

1. Where subgrade or layer of soil material must be moisture-conditioned before compacting, uniformly apply water to surface during or subsequent to compacting operations.

2. Remove and replace, or scarify and air dry, soil material that is too wet to permit compacting to the specified density.

3. Soil material that has been removed because it is too wet to permit compacting may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing, or pulverizing until moisture content is reduced to a satisfactory value as determined by moisture-density relation tests.

3.13 FILLING AND BACKFILLING

A. Filling and backfilling work shall include, but is not limited to, the following:

1. Contractor shall place and compact bank-run sand and gravel from approved imported sources consisting of clean bank-run gravel or sandy gravel, free from organic material, loam, wood, trash, snow, ice, and other objectionable material, well graded within the following limits:

Maximum retained on 3/4" sieve:	30%.
Maximum retained on No. 4 sieve:	50%.
Maximum passing 100 sieve:	25-30%.
Maximum passing 200 sieve:	5%.

No material larger than 2-1/2" to 4" sieve size by weight. When available, on-site material may be used in place of imported controlled structural fill with the Soils Engineer's approval.

2. Compaction of bank-run gravel under footings, foundation, under slabs on grade, and in building areas shall be to 95% of maximum density in accordance with ASTM Test Designation D1557.

3. Granular material where required under footings and foundations shall conform to material and gradations previously specified and shall be determined in accordance with ASTM Standard Specifications C117 and C136.

4. Filling--Imported Controlled Structural Fill: Compaction of the controlled imported structural fill shall be performed at a moisture content 3% drier than optimum as determined in the lab. It shall be placed in uniform layers not exceeding 10 and/or 12 inches thick after compaction. Each lift shall be compacted to not less than 95% of the maximum dry density determined within the lab as modified proctor density and shall be monitored by the soils engineer using the applicable ASTM standard for testing. Each lift shall have a minimum of 2 feet density test per 500 square yards, one located in the area of the propose column and the second located

under a continuous wall footing. More frequent testing may be required at the discretion of the Soils Engineer based on the extent of filling on any given day or should any area become suspect.

5. Filling--Subbase Fill: Compaction of all subbase fill, either imported or on-site, shall be compacted at a moisture content 1-1.5% drier than optimum as determined in the lab. The subbase fill shall be placed in uniform layers not exceeding 8 inches in depth when uncompacted. Each lift shall be compacted to not less than 95% of its maximum dry density determined in the lab as modified standard for testing. At least two field density test shall be performed per lift within the area being filled on any given day beneath buildings provided the lift areas do not exceed 500 square yards.

3.14 TRENCH BACKFILLING

A. Criteria: Trenches shall not be backfilled until required tests are performed and the utility systems comply with and are accepted by applicable governing authorities. Backfill trenches as specified. If improperly backfilled, reopen to depth required to obtain proper compaction. Backfill and compact, as specified, to properly correct condition in an acceptable manner.

B. Backfilling: After pipe or conduit has been installed, bedded, and tested as specified, backfill trench or structure excavation with specified material placed in 8" maximum loose lifts. Compact to minimum density of 95 percent of optimum density in accordance with ASTM D698 (or 92 percent of optimum density in accordance with ASTM D1557).

C. Compaction: Exercise proper caution when compacting immediately over top of pipes or conduits. Water jetting or flooding is not permitted as method of compaction.

D. Compaction Testing: Independent testing laboratory shall perform test at intervals not exceeding 200'-0" of trench for the first and every other 8" lift of compacted trench backfill and furnish copies of test results as specified.

3.15 MATERIALS FOR FILL UNDER CONCRETE SLABS ON GRADE

A. Contractor is to establish building pad at underside of floor slab, plus or minus 1/2".

B. Prior to placing fill fine grading materials on building pad, existing pad fill shall be leveled and recompacted.

C. Fill materials under concrete slabs on-grade in building areas, under sidewalks, pads, concrete aprons, etc., are to be the sieve analysis previously shown for controlled structural fill.

D. Compaction of fill shall be as previously set forth. When compacting fill with mechanical compactor against foundation walls, pits, loading dock, etc., Contractor shall provide complete protection against damage to said installations.

E. There is to be a layer of no less than 6" of clean suitable bank run sand fill below all slabs on grade. On site material may be acceptable and its usability is to be verified via soils reports. The Contractor’s bid is to be based on the use of on site material for use under slabs unless indicated otherwise within the Construction Documents.

F. Moisture Control: Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade or layer of soil material. Apply water in minimum, quantity as necessary to prevent free water from appearing on surface during or subsequent to compaction operations.

1. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction

to specified density.

2. Stockpile or spread soil material that has been removed because it is too wet to permit compaction. Assist drying by discing, harrowing, or pulverizing until moisture content is reduced to a satisfactory value.

3.16 GRADING

A. General: Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated or between such points and existing grades.

B. Grading Outside Building Lines: Grade areas adjacent to building lines to drain away from structures and to prevent ponding. Finish surfaces free from irregular surface changes and as follows:

1. Lawn or Unpaved Areas: Finish areas to receive topsoil to within not more than 0.10 foot above or below required subgrade elevations.

2. Walks: Shape surface of areas under walks to line, grade, and cross section, with finish surface not more than 1/2" above or below required subgrade elevation.

3. Shape the surface or areas scheduled to be under pavement to line, grade, and cross section, with finished surface not more than 0.05 feet above or below the required subgrade elevation.

C. Grading Surface or Fill under Building Slabs: Grade smooth and even, free of voids, compacted as specified, and to required elevation. Provide final grades within a tolerance of 1/2" when tested with a 10-foot straight edge.

D. Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage of maximum or relative density for each area classification.

3.17 PAVEMENT SUB BASE COURSE

A. General: Subbase course consist of placing subbase material, in layers of specified thickness, over subgrade surface to support a pavement base course.

1. Refer to other Division 32 sections for paving specifications.

B. Grade Control: During construction, maintain lines and grades including crown and cross-slope of subbase course.

C. Shoulders: Place shoulders along edges of subbase course to prevent lateral movement. Construct shoulders of acceptable soil materials, placed in such quantity to compact to thickness of each subbase course layer. Compact and roll at least a 12-inch width of shoulder simultaneously with the compaction and rolling of each layer of subbase course.

D. Placing: Place sub base course material on prepared subgrade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting subbase material during placement operations.

1. When a compacted subbase course is indicated to be 6" thick or less, place material in a single layer. When indicated to be more than 6" thick, place material in equal layers, except no single layer more than 6" or less than 3" in thickness when compacted.

3.18 FOOTING AND BUILDING SLAB SUB BASE COURSE

A. General: Subbase course consists of placement of subbase material, in layers of indicated thickness, over subgrade surface and/or granular fill to support concrete building slabs as indicated on drawings.

B. Placing: Place material on prepared subgrade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting material during placement operations.

1. When a compacted subbase course is indicated to be 6" thick or less, place material in a single layer. When indicated to be more than 6" thick, place material in equal layers, except no single layer more than 6" or less than 3" in thickness when compacted.

3.19 FIELD QUALITY CONTROL

A. Quality Control Testing During Construction: Allow testing service and the Construction Manager (when applicable) to inspect and approve each subgrade and fill layer before further backfill and construction work is performed.

1. Perform field density tests in accordance with ASTM D 1556 (sand cone method) or ATM D 2167 (rubber balloon method), as applicable.

2. Field density tests may also be performed by the nuclear method in accordance with ASTM D 2922, providing that calibration curves are periodically checked and adjusted to correlate to tests performed using ASTM D 1556. In conjunction with each density calibration check, check the calibration curves furnished with the moisture gauges in accordance with ASTM D3017.

    a. If field tests are performed using nuclear methods, make calibration checks of both density and moisture gauges at beginning of work, on each different type of material encountered, and at intervals as directed by the Contracting Officer.

3. Footing Subgrade: Per each stratum of soil on which footings will be placed, perform at least one test to verify required design bearing capacities. Subsequent verification and approval of each footing subgrade may be based on a visual comparison of each subgrade with related tested stratum when acceptable to the Construction Manager (if applicable) and the Architect.

4. Paved Areas and Building Slab Subgrade: Perform at least one field density test of subgrade for every 2,000 sq. ft. of paved area or building slab, but in no case fewer than three tests. In each compacted fill layer, perform one field density test for every 2,000 sq. ft. of overlaying building slab or paved area, but in no case fewer than three tests.

5. Foundation Wall Backfill: Perform at least two field density tests at locations and elevations as directed.

6. If it is determined by the Construction Manager (if applicable), the Architect, the Owner, and/or Independent geotechnical testing laboratory and associated soils engineer, based on testing service reports and inspection, subgrade or fills that have been placed are below specified density, perform additional compaction and testing until specified density is obtained.

3.20 EROSION CONTROL

A. Provide erosion control methods in accordance with requirements of authorities having jurisdiction or if the project is of sufficient size to require one, refer to the Storm Water Prevention and Protection Plan included elsewhere herein.

3.21 MAINTENANCE

A. Protection of Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris.

B. Repair and reestablish grades in settled, eroded, and rutted areas to specified tolerances.

C. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and compact to required density prior to further construction.

D. Settling: 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.

3.22 CERTIFICATION

A. Upon completion of this portion of the work, and as a condition of its acceptance, deliver to the Architect a written report from a soil engineer certifying that the compaction requirements have been obtained and the type or classification of fill material placed.

3.23 DISPOSAL OF EXCESS AND WASTE MATERIALS

A. All rubbish and other excavated material, which in the opinion of the Architect is not suitable for fill or grading, shall be removed and legally disposed of away from the premises.

B. Approved excavated material shall be spread on the site in locations as directed by the Architect.

C. Excavated material in excess of that required for all filling, backfilling, and rough grading shall become the property of the Contractor and shall be removed from the premises and legally disposed of.

D. Removal from the School's Property: Remove waste materials, including unacceptable excavated material, trash, and debris, and dispose of it off the School's property.

END OF SECTION

DIVISION 31 – EARTHWORK

SECTION 310001 – SITE WORK GENERAL PROVISIONS

PART 1 - GENERAL

1.01 GENERAL:

A. Applicable provisions of the “Conditions of the Contract” shall govern the work of this section and under Division 31, 32 & 33.

1.02 SCOPE/SUMMARY:

A. The Drawings and Specifications are intended to provide for a complete and ready for operation installation. However, both the Drawings and Specifications are for the Contractor's guidance and are not intended to give every detail of the existing conditions or new installations nor do they describe every fitting required for the installation of the work. The Contractor shall furnish, install, and place in workmanlike manner all equipment, accessories, supports, fittings, and all other material needed for the complete installation.

B. Before submitting his proposal, the Contractor shall be fully informed to the extent, character and intent of the work to be done by him. No consideration will be granted for any misunderstanding of the material to be furnished or work to be performed.

C. The site work scope shall include providing all plant facilities, labor, materials, tools, equipment, appliances and supervision necessary or incidental to complete site work, including, but not limited to, the following:

1. Surveying and layout work
2. Preliminary work
3. Demolition
4. Clearing and grubbing
5. Striping and stockpiling existing topsoil
6. Protection
7. Removal and disposal
8. Rough grading, excavating, filling, backfilling and dewatering
9. Excavating, trenching, and backfilling for utility systems including gas, water, electric, telephone, storm and sanitary lines.
10. Sediment and erosion control procedures as may be required.
11. Storm water drainage systems, catch basins and manholes
12. Site improvements, including but not limited to, fencing, curbing, striping, signage, guardrails, paving, lighting, retaining walls and miscellaneous related work.
13. Landscape work
14. Finish grading and paving
15. Site work water mains, electric and gas services
16. Sanitary sewer systems, including manholes and exterior grease traps
17. Concrete work in connection with site preparation and development

D. Perform all work in accordance with all applicable local, state, and federal codes, laws, and ordinances.

E. Sediment and erosion control procedures shall be performed as required and in conformance with Specification Section 312500; and for LEED Certified projects, in accordance with the requirements of LEED SS Prerequisite 1

F. If the project is of a size and scope that requires a Storm Water Pollution Prevention Plan (SWPPP) refer to additional documentation provided elsewhere herein and conform to its requirements in conjunction with and as related to this section.

1.03 GENERAL PROVISIONS:

A. Verifying Existing Conditions:

1. The Contractor, before submitting his bid, shall examine the site to which this work is in any way dependent upon according to the intent of these Specifications and accompanying Drawings. He shall report to the Architect, in writing, prior to his bid any conditions which prevent him from performing his work. No "Waiver of Responsibility" for inadequate, incomplete, or defective work will be considered by the Architect unless written notice has been filed by the Contractor.

a. Cooperation:

1) When a project involves construction on an existing occupied site, the work called for in this Specification and indicated on the accompanying Drawings shall be carried on in conjunction with the continued operation of the existing building and shall be so arranged that its installation and operation will conform with and facilitate the early installation of work.

2) The Contractor shall bear the expense required to revise his work due to any failure to coordinate the installation of his work with that of the building's operation.

3) The Contractor shall be responsible for the distribution and information concerning his work as required for the prompt installation and coordination with other trades.

b. Accessibility and Clearances:

1) The Contractor shall inform himself fully regarding peculiarities and limitations of space for the installation of the materials and equipment under Division 31, 32 & 33. He shall verify all dimensions and conditions in the field. No extra compensation will be allowed because of differences between actual dimensions and the sizes shown on the Drawings.

2) The Contractor shall see that equipment and apparatus necessary to be reached from time to time for operation and maintenance are made easily accessible.

3) Although the location of items may be shown on the Drawings in a specific place, the construction may disclose the fact that the location for this work does not make its position easily and quickly accessible. In such case, the Contractor shall call the Architect's attention to same before installing the work and shall be guided by the Architect's instruction.

1.04 PRELIMINARY WORK:

A. Before starting the work, make a thorough inspection of the work area to determine the physical condition of natural features and adjacent improvements to remain.

B. Provide complete mark out/tone out of existing utilities for coordination of proposed work. Repair any damage that occurs to existing utilities to remain at no additional cost to the owner.

C. Notify all authorities owning utility lines running to or on the property. Protect and maintain all utility lines that are to remain on the property and cap those that are not required in accordance with the

instructions of the utility companies or local authorities having jurisdiction over them.

PART 2 - PRODUCTS

This part not used.

PART 3 – EXECUTION

3.01 PROTECTION:

A. The Contractor shall effectively protect, at his expense, all materials and equipment, including his employees, during the period of construction, and he shall be held responsible for all damage done to his work, until the same is fully accepted by the Architect.

B. Provide protection necessary to prevent damage to existing building(s), concrete, pavement, utilities or vegetation indicated on the Contract Documents to remain. Box or otherwise protect from damage all trees, shrubs, lawns, etc. which are to be preserved. Trees shall be kept free from guy lines. Remove all protection when work is completed and when authorized to do so by the Architect.

C. Protect improvements on adjoining properties and on Owner's property.

D. Restore damaged improvements to original condition as acceptable to Architect and/or Owner.

E. Protect the property, adjoining properties, wetlands, etc. from damage by soil erosion by installing silt fences and hay bales or as indicated in the projects Storm Water Pollution Prevention Plan, if one is applicable.

F. Conduct site operations to ensure minimum interference with parking lots, roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct parking lots, streets, walks, or other occupied or used facilities without permission from the Owner and/or authorities having jurisdiction.

G. Provide traffic control as required, in accordance with the New York State Department of Transportation "Manual of Uniform Traffic Control Devices" and the local jurisdiction traffic safety requirements.

H. Streets, roadways, parking lots, etc. shall be thoroughly cleaned and/or swept on a daily basis.

3.02 CLEARING and GRUBBING:

A. Clear and grub in the areas of the proposed building, paved areas and/or site improvements in preparation for rough grading and new construction.

B. Completely remove all trees, shrubs, stumps, roots, vegetation, growth, paving, boulders, rocks, rubbish, and all other material interfering with the installation of new construction or not suitable for rough or finished grading, except trees or shrubs directed or indicated to remain.

C. Remove all roots 1" in diameter or larger. Remove all boulders and rocks larger than 3" in largest dimension.

D. Remove all topsoil, peat, and soils containing a high degree of organic matter. (Coordinate with Item 3.03 below)

E. Remove all soft clay soils and rubbish fills.

F. Excavation resulting from the removal of trees, roots, and the like shall be filled with suitable on-site material or imported fill as approved by the Architect/Engineer. Place fill material in horizontal layers not exceeding 8" loose depth, and thoroughly compacted per fill requirements.

3.03 STRIPPING and STOCKPILING EXISTING TOPSOIL:

A. Existing topsoil and sod on the site within area designated on the drawings shall be stripped to whatever depths encountered to prevent intermingling with underlying subsoil or other objectionable material. Cut heavy growths of grass from areas before stripping.

B. Free the topsoil of stones, roots, brush, rubbish, clay or other unsuitable materials/objects over 2” in diameter and remove the latter from the premises before stockpiling the topsoil.

C. Care shall be taken not to contaminate the topsoil with clay or other unsuitable materials and remove the latter from the premises before stockpiling the topsoil.

D. Stockpile topsoil in storage piles where indicated or permissible within site staging perimeter (coordinate with Architect and/or Construction Manager). Construct storage piles to freely drain surface water. Cover storage piles as required to prevent windblown dust. Excess topsoil shall be removed from the site by the Contractor unless specifically noted otherwise on the drawings.

E. Refer to soil erosion and sediment control drawing, if included, for additional details.

3.04 DEMOLITION:

A. Existing structures (where indicated), concrete and paving on the site (where indicated), including all existing/discovered inactive cesspools, cisterns, wells, foundation materials shall be completely demolished and all debris removed from the site. Excavation resulting from the removal sub-surface structures, foundations/footings shall be filled with suitable on-site material or imported fill as approved by the Architect/Engineer. Place fill material in horizontal layers not exceeding 8" loose depth, and thoroughly compacted per fill requirements.

B. Remove existing above grade and below grade improvements and abandoned underground piping or conduit as shown on the drawings or necessary to permit construction and other work.

C. All work shall be executed in such a manner as not to endanger the safety of the workmen or the public. All barriers and precautionary measures shall be erected as required.

3.05 REMOVAL and DISPOSAL:

A. Dispose of all debris resulting from the work of this section. Haul off site and dispose of legally.

B. Do not burn rubbish, organic matter, etc. on the site.

C. Do not bury concrete, rock, stumps/roots, etc. on the site.

END OF SECTION

DIVISION 31 – EARTHWORK

SECTION 310002 – STAKE OUT

PART 1 - GENERAL

1.01 SUMMARY

A. Provide all plants, labor, tools, appliances, equipment, materials, and services required for the work indicated on the drawings and specified for this section.

PART 2 - MATERIALS

2.01 PRODUCTS

A. Not applicable to this section.

PART 3 - EXECUTION

3.01 GENERAL

A. The Contractor shall employ a competent registered (New York State) surveyor to lay out the work and to establish all points, lines, and grades necessary for the proper execution of the work. The surveyor shall contact the Owner's representative before laying out the work at the site in order to coordinate the proper alignment of the work.

B. The Contractor shall have his engineer or surveyor place a sufficient quantity of stakes so that the location of all items to be installed can be clearly determined. This portion shall also be coordinated with the Owner's representative before commencing work.

C. At the completion of the work, the Contractor must submit to the Owner's representative a signed certification of the accuracy of the vertical elevations and horizontal locations of the work in relation to the contract plans. This must take the form of "as-built" drawings (a transparency of the contract plans may be used) and shall bear the signature and registration number of a registered New York State surveyor hired by or in the employ of the Contractor. This will be strictly enforced so that the Owner may have an accurate record of the completed work.

D. Should any discrepancy be found between points, lines, or grades shown on the drawings and actual conditions found in the field, the Contractor shall immediately notify the Owner's representative of such discrepancy, and the Contractor will not proceed with the work affected thereby until he has received the necessary instructions from the Landscape Architect or his representative.

E. The Contractor shall carefully maintain any benchmarks, monuments, and other reference marks, and, if disturbed or destroyed, replace as directed. All markers, permanent stakes, and any other reference marks used in the layout shall be left in place as directed by the Owner's representative.

END OF SECTION

DIVISION 31 - EARTHWORK

SECTION 312513 – EROSION AND SEIDMENT CONTROL

PART 1 - GENERAL

1.01 RELATED SECTIONS

A. Storm Utility Drainage: Section 334100.

1.02 REFERENCES

A. Erosion and Sediment Control Guidelines: Conform to the latest edition of “NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL” by the New York State Department of Environmental Conservation (NYSDEC) DOW (i.e., Bluebook). Refer to these guidelines for construction and maintenance of all items (Temporary and Permanent Structural, Vegetative and Biotechnical) included in the Storm Water Pollution and Prevention Plan (SWPPP).

B. Storm Water Management: Conform to the latest edition of “NEW YORK STATE STORMWATER MANAGEMENT DESIGN MANUAL” prepared by Center for Watershed Protection for NYSDEC.

1.03 RESPONSIBILITY

A. A SWPPP has been prepared for this project. Install and maintain the temporary storm water and diversion control items as shown on the drawings before starting any grading or excavation and maintain compliance of all SWPPP/State Pollutant Discharge Elimination System (SPDES) regulations. Provide any temporary sediment and erosion control measures that may be required within limits of the Work, including any staging areas, throughout construction in conformance with the plan, and as directed by the Owner’s Representative. Place the permanent control practices required before the removal of the temporary storm water diversion and control items.

B. During construction conduct operations in such a manner as to prevent or reduce to a minimum any damage to any water body from pollution by debris, sediment, chemical or other foreign material, or from the manipulation of equipment and/or materials in or near a stream or ditch flowing directly to a stream. Any water which has been used for wash purposes or other similar operations which become polluted with sewage, silt, cement, concentrated chlorine, oil, fuels, lubricants, bitumen, or other impurities shall not be discharged into any water body.

C. In the event of conflict between these specifications and the regulation of other Federal, State, or local jurisdictions, the more restrictive regulations shall apply.

D. The Contractor shall adhere to all requirements of the SWPPP. Comply with all applicable NYSDEC regulatory requirements.

E. The Contractor will submit copies of certificates documenting that on-site workers have completed a NYSDEC endorsed erosion and sediment control training as required by General Permit GP-0-20-001.

F. In the event of a winter shutdown: The Contractor shall submit a snow management plan in accordance with the NYS Standards and Specifications for Erosion and Sediment Control, latest revision. All Erosion and Sediment Control practices in use must be updated to the standards outlined for winter shutdown/stabilization.

1.04 DESCRIPTION

A. The Work shall consist of furnishing, installing, inspecting, maintaining, and removing soil and erosion control measures as shown on the contract documents or as ordered by the Owner's Representative during the life of the contract to provide erosion and sediment control.

B. Temporary structural measures provide erosion control protection to a critical area for an interim period. A critical area is any disturbed, denuded slope subject to erosion. These are used during construction to prevent off-site sedimentation. Temporary structural measures shall be implemented as called for in the SWPPP and Contract Drawings and include elements such as check dams, construction road stabilization, stabilized construction entrance, dust control, earth dike, level spreader, perimeter dike/swale, pipe slope drain, portable sediment tank, rock dam, sediment basin, sediment traps, silt fence, storm drain inlet protection, straw/hay bale dike, access waterway crossing, storm drain diversion, temporary swale, turbidity curtain, water bars or other erosion control devices or methods as required.

C. Permanent structural measures also provide erosion control protection to a critical area. They are used to convey runoff to a safe outlet. They remain in place and continue to function after completion of construction. Permanent structural measures include debris basins, diversion, grade stabilization structure, land grading, lined waterway (rock), paved channel, paved flume, retaining wall, riprap, rock outlets, and stream bank protection or other erosion control devices or methods as required.

D. Weekly inspections will be completed by the Owner's Representative and the Contractor shall comply with and correct all deficiencies found as a result of these inspections. At the end of the construction season when soil disturbance activities will be finalized or suspended until the following spring, the frequency of the inspections may be reduced. If soil disturbance is completely suspended and the site is properly stabilized, a minimum of monthly inspections must be maintained. The stabilization activities must be completed before snow cover or frozen ground. If vegetation is required, seeding, planting and/or sodding must be scheduled to avoid die-off from fall frosts and allow for proper germination/establishment.

1.05 DEFINITIONS

A. Temporary structural measures:

1. Check Dam: Small barrier or dam constructed of stone, bagged sand or gravel to reduce velocity of flow.
    a. Winter Stabilization: any snow buildup or ice dams must be removed from the check dams to ensure adequate functionality.

2. Construction Road Stabilization: Stabilization of construction roads to control erosion.
    a. Winter Stabilization: snow removal along the construction road must follow the snow management plan provided by The Contractor. Any damaged or removed portions of the construction road must be restored to the standards outlined in the NYS Standards and Specifications for Erosion and Sediment Control, latest revision.

3. Stabilized Construction Access: A stabilized pad of aggregate underlain with geo-textile where traffic enters/exits a construction site to reduce or eliminate tracking of sediment to public roads.
    a. Winter Stabilization: snow removal along the construction access must follow the snow management plan provided by The Contractor. Any damaged or removed portions of the construction road must be restored to the standards outlined in the NYS Standards and Specifications for Erosion and Sediment Control, latest revision.

4. Dust Control: Prevent surface and air movement of dust from disturbed soil surfaces.
5. Earth Dike: A temporary berm or ridge of compacted soil, located to channel water to a sediment trapping device.
6. Level Spreader: A non-erosive outlet for concentrated runoff to disperse flow uniformly across a slope.
7. Perimeter Dike/Swale: A temporary ridge of soil excavated from an adjoining swale located along the perimeter of the site or disturbed area to prevent runoff from entering a disturbed area and preventing sediment laden runoff from leaving a construction site.
8. Pipe Slope Drain: A structure placed from the top of a slope to the bottom of a slope to convey runoff without causing erosion.
9. Portable Sediment Tank: A compartmented tank to which sediment laden water is pumped to retain sediment before pumping the water to adjoining drainage ways.
10. Rock Dam: A rock embankment located to capture sediment.
    a. Winter Stabilization: any snow buildup or ice dams must be removed from the dams to ensure adequate functionality.

11. Sediment Basin: A barrier constructed across a drainage way to intercept and trap sediment.
12. Sediment Traps: A control device formed by excavation to retain sediment at a storm inlet or other points of collection.
13. Silt Fence: A barrier of geo-textile fabric installed on contours across the slope to intercept runoff by reducing velocity. Replace after 1 year.
    a. Winter Stabilization: a double row of silt fencing in all locations. There shall be 5 feet of separation (unless infeasible due to site limitations) between the two rows. Mark silt fence with tall stakes that are visible above the snow pack.

14. Storm Drain Inlet Protection: A semi-permeable barrier installed around storm inlets to prevent sediment from entering a storm drainage system.
    a. Winter Stabilization: storm drains must be continually cleared to eliminate clogging.

15. Straw/Hay Bale Dike: Intercept sediment laden runoff by reducing velocity. Replace after 3 months.
16. Access Waterway Crossing: A structure placed across a waterway to provide circulation for construction purposes.
17. Storm Drain Diversion: The redirection of a storm drain line or outfall channel for discharge into a sediment trapping device.
18. Temporary Swale: A temporary excavated drainage swale.
19. Turbidity Curtain: A flexible, impenetrable barrier used to trap sediment when construction occurs within water bodies or along a shoreline.
20. Water Bars: A ridge or channel constructed diagonally across a sloping road or right-of-way.
21. Concrete Washout: A temporary excavated or above ground lined constructed pit where concrete truck mixers and equipment can be washed after their loads have been discharged, to prevent highly alkaline runoff from entering storm drainage systems or leaching into soils.

B. Permanent structural measures:

1. Diversion: A parabolic or trapezoidal swale with a supporting ridge on the lower side constructed across a slope to intercept and convey runoff to stable outlets at non-erosive velocities.
2. Debris Basin: A barrier or dam constructed across a waterway to form a basin for catching and storing sediment or debris that gives protection downstream.
3. Grade Stabilization Structure: A structure to stabilize the grade by providing channel linings that can withstand high velocities.
4. Lined Waterway (rock): A waterway lined with stone to dispose of high velocity runoff.
    a. Winter Stabilization: any large snow buildup or ice dams must be removed from the rocks to ensure adequate functionality.

5. Paved Channel (concrete): A waterway lined with concrete to dispose of high velocity runoff.
6. Paved Flume: A concrete lined channel to convey water down a steep slope.
7. Retaining Wall: A structural wall constructed to prevent soil movement down steep slopes.
8. Riprap: A layer of stone designed to protect slopes that are subject to erosion.
   a. Winter Stabilization: any snow buildup or ice dams must be removed from riprap areas to ensure adequate functionality.

9. Rock Outlets: Rock placed at the outlet end of culverts, conduits or channels.
   a. Winter Stabilization: any snow buildup or ice dams must be removed from the outlets to ensure adequate functionality.

10. Stream Bank Protection: Stabilization of eroding stream banks through use of riprap, gabions or pre-cast concrete units.
11. Anchored Turf Reinforcment Matting: A temporary or permanent protective covering placed on a prepared, seeded plating area that is anchored in place by staples or other means to aid in controlling erosion by absorbing rain splash energy and withstand overland flow as well as provide a microclimate to protect and promote seed establishment.

1.06 SUBMITTALS

A. Submit the following information:

1. Product data for materials proposed for use.
2. All applicable permits for Erosion Control.
3. Field changes to the Erosion and Sediment Control plan provided in the Contract Documents

PART 2 - PRODUCTS

2.01 DESIGN BASIS PRODUCTS

A. The following companies provide Erosion and Sediment Control products that are acceptable for use in various construction scenarios. Equivalent alternatives may be selected for use with approval by the Engineer/Owner's Representative.

B. Silt fence

1. Mirafi, 365 South Holland Drive, Pendergrass, GA, 30567, (888) 795-0808, www.mirafi.com.

C. Anchored turf reinforcement matting

1. Landlok (stitchbonded) by Propex Geosolutions, 4019 Industry Drive, Chattanooga, TN 37416, (800) 621-1273, www.propexglobal.com.

D. Erosion control blanket

1. North American Green, 14649 Highway 41 North, Evansville, IN 47725, (800) 772-2040, www.nagreen.com.
2. Nedia Enterprises, Inc., 22187 Vantage Pointe Place, Ashburn, VA 20148, (888) 725-6999, www.nedia.com.

E. Turbidity curtains/barriers

1. Siltdam Inc., P.O. Box 960, Brockton MA, 02303, (800) 699-2374, www.spilldam.com.

2. Aer-Flo Inc., 4455 18th St. East, Bradenton, FL 34203 (800) 823-7356, www.aerflo.com.
3. Brockton Equipment Inc., P.O. Box 960, Brockton, MA 02303, (800) 699-2374, www.spilldam.com.

F. Fiber roll

1. Nedia Enterprises, Inc., 22187 Vantage Pointe Place, Ashburn, VA 20148, (888) 725-6999, www.nedia.com.
2. KriStar, 1219 Briggs Ave., Santa Rosa, CA 95401, (800) 579-8819, www.kristar.com.
3. Belton Industries, 5600 Oakbrook Parkway, Norcross GA., 30093, (800) 225-4099, www.beltonindustries.com.
4. Rolanka International Inc., 155 Andrew Drive, Stockbridge GA 30281, (800) 760-3215, www.rolanka.com.

G. Dust abatement

1. Apex Resources Inc., 12910 Shelbyville Road, Louisville, KY 40243, (888) 677-2739, www.apexr.com.
2. MonoSol, LLC, 707 E. 80th PL., Merrillville, IN 46410 (800) 237-9552, www.terraloc.com.

H. Stream stabilization

1. Contech Construction Products Inc., 9025 Centre Point Drive, Suite 400, West Chester, Ohio 45069, (800) 338-1122, www.contech-cpi.com.

I. Biodegradable Blankets

1. Rolanka International Inc., 155 Andrew Drive, Stockbridge GA 30281, (800) 760-3215, www.rolanka.com.

PART 3 - EXECUTION

3.01 WORK AREAS

A. The Owner's Representative has the authority to limit the surface area of erodible earth exposed by earthwork operations and to direct the Contractor to provide immediate temporary or permanent erosion measures to minimize damage to property and contamination of watercourses and water impoundments. Under no circumstances will the area of erodible earth material exposed at one time exceed 50,000 ft2. The Owner's Representative may increase or decrease this area of erodible earth material exposed at one time as determined by his analysis of project, weather and other conditions. The Owner's Representative may limit the area of clearing and grubbing and earthwork operations in progress commensurate with the Contractor's demonstrated capability in protecting erodible earth surfaces with temporary, permanent, vegetative or biotechnical erosion control measures.

B. Schedule the work so as to minimize the time that earth areas will be exposed to erosive conditions. Provide temporary structural measures immediately to prevent any soil erosion.

C. Provide temporary seeding on disturbed earth or soil stockpiles exposed for more than 7 days or for any temporary shutdown of construction. In spring, summer or early fall apply rye grass at a rate of 1 lb/ 1000 ft2. In late fall or early spring, apply certified Aroostook Rye at a rate of 2.5 lbs./ 1000 ft2. Apply hay or straw at a rate of 2 bales/ 1000 ft2 or wood fiber hydromulch at the manufacturer's recommended rate. Hay or straw shall be anchored.

D. Coordinate the use of permanent controls or finish materials shown with the temporary erosion measures.

E. All erosion and sediment control devices must be maintained in working order until the site is stabilized. All preventative and remedial maintenance work, including clean out, repair, replacement, re-grading, re-seeding, or re-mulching, must be performed immediately.

F. After final stabilization has been achieved temporary sediment and erosion controls must be removed. Areas disturbed during removal must be stabilized immediately.

END OF SECTION

DIVISION 32 – EXTERIOR IMPROVEMENTS

SECTION 321216 – ASPHALT PAVING

PART 1 – GENERAL

1.01 GENERAL

A. These specifications are intended to meet the 2008 N.Y.S.D.O.T. standard specifications U.S. Edition Section 403. It can be found at: www.nysdot.gov/main/businesscenter/engineering/specificationsupdated-standard-specifications-us

B. GC shall be responsible for all work to be provide in conformance with sections referred to herein or within specification sections found on the N.Y.S.D.O.T. website.

C. Drawings and General Provisions of the Contract and Supplementary conditions and Division 01 specification sections, apply to the work of this section.

1.02 SCOPE

A. The work of this section applies to all recycled concrete aggregate (RCA) sub-base and asphalt items in the contract. The work shall consist of preparing the existing subgrade material to receive the new RCA sub-base, as well as furnishing, mixing, spreading and compacting the RCA sub-base, dense asphalt binder course and the asphalt top course to the lines, grades, and dimensions shown on the plans and as specified herein.

B. Unless shown otherwise indicated on plans the new pavement system for roads and parking lots shall be as follows:

1. Recycled concrete aggregate sub-base course shall be 6” thick (compacted) N.Y.S.D.O.T. type 1, option B, alternate A or B.

2. Dense asphalt binder course shall be 3 ½ inches (compacted) thick N.Y.S.D.O.T. type 3.

3. Asphalt top course shall be 1 ½ inches thick N.Y.S.D.O.T. type 6F3.

C. Unless otherwise indicated on plans the pavement systems for tracks and tennis courts shall be as follows:

1. Tracks:

a. Recycled concrete aggregate sub-base course shall be 6” thick (compacted) N.Y.S.D.O.T. type 1, option B, alternate A or B.

b. Dense asphalt binder course shall be 2 ½ inches (compacted) thick N.Y.S.D.O.T. type 3.

c. Asphalt top course shall be 1 ½ inches thick N.Y.S.D.O.T. type 7.

2. Tennis Courts:

a. Recycled concrete aggregate sub-base course shall be 6” thick (compacted) N.Y.S.D.O.T. type 1, option B, alternate A or B.

b. Dense asphalt binder course shall be 2 ½ inches (compacted) thick N.Y.S.D.O.T. type 3.

c. Asphalt top course shall be 1 ½ inches thick N.Y.S.D.O.T. type 7.

D. Unless otherwise indicated on plans, asphalt play surfaces and walks shall be 2" Type 7 asphalt over 6" RCA as described in B above.

1.03 RELATED SECTIONS

A. Section 014523 – Tests, Inspections, and Special Inspections Quality Assurance Plan
B. Section 033000 – Cast-In-Place Concrete
C. Section 310000 – Earthwork
D. Section 310001 – Site Work General Provisions
E. Section 310002 – Stakeout
F. Section 312500 – Erosion and Sediment Controls
G. Section 320117 – Pavement Repair and Resurfacing
H. Section 321216.11 – Asphalt Overlay
I. Section 321723 – Pavement Markings
J. Section 321723.11 – Pavement Markings (Thermoplastic)
K. Section 321723.12 – Pavement Markings (Pre-formed Reflectorized)
L. Section 334000 – Storm Drainage Utilities

1.04 SUBMISSIONS

A. All submissions shall be made in accordance with Section 013300 – Submittal Procedures.

B. For the recycled concrete aggregate (RCA) the Contractor shall submit a sieve gradation for approval by the architect. Along with sieve, the Contractor shall submit documentation that the material to be provided will be obtained from a N.Y.S.D.E.C. registered or permitted construction and demolition (C & D) debris processing facility as specified in Section 360-16.1 of 6NYCRR Park 360 "Solid Waste Management Facilities." If blast furnace slag is to be used, provide beneficial use determination (BUD) prior to its use as specified in the 6NYCRR par 360-1.15, "Solid Waste Management Facilities."

C. For the asphalt binder and top course, the Contractor shall submit to the Architect for approval, the job mix formula with current date, job location, asphalt plant, and contractor name. The type of asphalt and course shall also be stated. The job mix formula sheet shall indicate the gradations of the aggregates to be used in the mix along with the PGB content.

D. It shall be the Contractors responsibility upon the initial delivery of the materials and during subsequent deliveries, to take samples for testing as described In Section 1.06 Quality Assurance. If for any reason the Owner or Architect shall request the material be tested, the Contractor shall provide the samples free of charge. If requested the Contractor shall also perform, free of charge, core samples of the constructed work for testing. All test results will be copied to the Contractor for their record.

E. Contractor shall provide written certification on their company letterhead that all installed asphalt was produced and installed in accordance with N.Y.S.D.O.T. specifications and guarantee work against structural and material defects for a period of one year from completion date.

F. Interim and final as-built surveys; reference Quality Assurance section below and Specification Section 017839.

1.05 QUALITY ASSURANCE (RCA SUB-BASE)

A. The Contractor is responsible to establish and maintain required design, grades, lines and elevations including crown and cross-slope of sub base course.

B. An independent testing laboratory, selected and paid for by the Owner shall be retained to perform construction testing of the in place sub-base course, for compliance with the Contract Documents. The Contractor shall arrange for and schedule the testing. The sub-base course shall be checked for thickness and tolerance by rod and level readings on a 50 ft. grid or as directed by the Architect. Readings shall be to +0.05' of design elevation that allow for asphalt thickness as shown on the Contract Documents. The Contractor shall at no cost to the Owner provide instruments personal and a suitable benchmark. Any deficiencies shall be corrected prior to proceeding with paving operations.

1. Prior to paving parking lots or plaza areas greater than 10,000 sf, the contractor shall provide an interim topographical survey of the RCA Sub-base in the datum of the Construction Documents for review for conformance by the Architect. Said survey is required to be performed a licensed land surveyor. Spot elevations on said survey shall be in complimentary locations to the Construction Drawings.

C. The following tests shall be performed on the sub-base material ASTM 1557 or ASTM D698 compaction test to determine % of compaction and molding water content needed to achieve the required engineering properties of the sub-base.

D. The following test shall be performed on the sub-base material ASTM D4318 determination of the liquid limit, plastic limit, and the plasticity index of soils.

E. In place sub-base material shall be tested in accordance with ASTM D1556 to determine the in place density and unit weight of soils using a sand cone apparatus, or ASTM D2167 to determine the in place density and unit weight of the compacted sub-base.

F. The sub-base material shall be compacted to not less than 98% of optimum density as determined by ASTM D698 or 95% as determined by ASTM D1557, unless otherwise indicated on the drawings.

G. The in place sub-base material shall be tested for thickness and compaction for each 5,000 square feet for jobs up to 20,000 s.f. and for each 10,000 s.f. for jobs larger than 20,000 s.f.

H. The independent testing laboratory shall prepare test reports that indicate test location, elevation data from a construction site benchmark, and test results. The Owner, Architect and Contractor shall all be provided with copies of reports within 96 hours of the time the test was performed. In the event that any test performed fails to meet these specifications, the Owner and the Contractor shall be notified immediately by the testing laboratory. It shall be the Contractor's responsibility to correct any non-conforming work at no additional cost to the Owner and pay for all additional testing by the independent testing laboratory to prove corrective work is in conformance with these specifications.

1.06 QUALITY ASSURANCE FOR HOT MIX ASPHALT (HMA)

A. All materials for hot mix asphalt (HMA) production, such as, aggregates, PG binder, reclaimed asphalt pavement (RAP), mineral filler, or any other materials shall meet N.Y.S.D.O.T. requirements.

B. The Contractor shall be responsible for quality control (QC). QC is defined as all activities required to produce HMA that meets all specification requirements. The Contractor shall provide HMA and assume all responsibilities for all QC activities at the production facilities.

C. Methods of Sampling and Testing

1. All HMA material shall be sampled and the properties enumerated in these specifications shall be determined in accordance with the following methods, as currently revised.

a. Sampling mineral aggregates ASTM: D-75
b. Sampling bituminous mixtures ASTM: D-979
c. Sieve analysis of aggregates ASTM: C-136
d. Determination of bitumen content ASTM: D-1097
e. Specific gravity of coarse aggregate ASTM: C-127
f. Specific gravity of fine aggregate ASTM: C-128
g. Sieve analysis of mineral filler ASTM: D-546
h. Sampling bituminous materials ASTM: D-140
i. Liquid limit, plastic limit & plasticity index ASTM: D-4318

Or current applicable methods recommended by the American Association of State Highway Officials, and/or The Asphalt Institute.

D. The PG binder will be accepted on the basis of PG binder suppliers certification. The Contractor shall provide a copy to the Owner.

PART 2 – MATERIALS

2.01 COMPOSITION OF MIXTURES (RCA)

A. Recycled concrete aggregate sub-base shall conform to N.Y.S.D.O.T. specification section 304, U.S. latest edition.

1. Contractor shall provide suitable material conforming to the requirements of N.Y.S.D.O.T. Section 203 and to the requirements contained herein.

2. Provide RCA which meets the specification material requirements and is within the Contractors capabilities to place and fine grade to the required tolerances.

3. If Alternate A is used, furnish materials of at least 95%, by weight, of recycled portland cement concrete aggregate (RCA), and free from organic and other deleterious material. This material may contain up to 5% by weight asphalt and/or brick.

4. 4If Alternate B is used, furnish a mixture of recycled portland cement concrete aggregate (RCA) conforming to Alternate A above mixed with stone, sand, gravel or blast furnace slag. This material may contain up to 5% by weight asphalt and/or brick.

5. Gradation for RCA shall conform to the following:

Sieve Size Designation	Percent Passing by Weight
4 inch	-
3 inch	100
2 inch	90 – 100
¼ inch	30 – 65
No. 40	5 – 40
No. 200	0 -10

6. Material will be accepted on the basis of magnesium sulfate soundness loss after four cycles of 20% or less. The required plasticity index of the material passing the No. 40 sieve is 5.0 or less.

7. A flat or elongated particle is defined herein as one which has its greatest dimension more than three times its least dimension. Provide material consisting of particles where not more than 30% by weight, of the particles retained on a ½ inch sieve are flat or elongated. Material with a percentage greater than 30 will be rejected.

2.02 COMPOSITION OF MIXTURES (HMA)

A. The HMA plant mix will generally be composed of a mixture of aggregate reclaimed asphalt pavement (RAP), filler if required, and PG binder. For any HMA required by the plans, formulate a job mix formula that satisfies the general limits imposed by N.Y.S.D.O.T. Table 403-1 Composition of Hot Mix Asphalt Mixtures latest version). A copy of this table can be found at the end of this section. See section 1.02B for system components. For type 6F3 mixture, determine the optimum asphalt content for the proposed gradation using the Marshall mix design method (50 blows). The resultant mixture shall meet the following Marshall properties.

Mix Property	Type 6F3
Air Voids %	3.0 – 5.0
Voids in Mineral Aggregate	14
Voids filled with Binder VFB, %	65 - 78

Contractor shall produce, deliver to the work site, and incorporate the mixture into the work within the mixing and placing temperature range imposed by Table 403-1 Composition of Marshall designed plant mixtures. The plant mixed material will be accepted after blending and mixing at the plant. The pavement courses will be accepted after all paving operations are completed and certified by the Contractor.

B. Fine aggregate will consist of materials conforming to the requirements of Section 703-01 - Fine Aggregate of the N.Y.S.D.O.T. specifications. In addition, fine aggregate may consist of screenings, free from deleterious materials and manufactured from sources of stone, gravel, or slag meeting the requirements of N.Y.S.D.O.T. specification section 703-02, Coarse Aggregate.

C. Coarse aggregate will consist of crushed stone, crushed gravel or crushed slag conforming to the N.Y.S.D.O.T. requirements of section 703-02, Except for Gradation.

D. When aggregates from approved natural fine sand sources are combined with coarse aggregates in the mixture, aggregate particles will meet additional requirements as follows:

1. Particles in the No. 1A and No. 1 primary sizes will meet the quality requirements of N.Y.S.D.O.T. specification section 703-02 and will have a minimum of 85% by weight, of the particles with at least two fractured faces.
2. Particles in the No. 2, No. 3 and No. 3A primary sizes will meet the quality requirements of N.Y.S.D.O.T. section 703-02 and will have a minimum of 75%, by weight, of the particles with at least one fractured face.

E. Coarse aggregate type 6F3 conditions:

1. Limestone or a blend of limestone and dolomite having an acid-insoluble residue content of not less than 20%

2. Dolomite

3. Sandstone, granite, chert, traprock, ore tailings, slag or other similar non-carbonate materials.

4. Gravel, or a natural or manufactured blend of the following types of materials: limestone, dolomite, gravel, sandstone, granite, chert, traprock, ore trailings, slag or other similar materials meeting the following requirements:

   a. (Type 6F3 Mixes) non-carbonate plus 1/8-inch particles must comprise a minimum of 10.0% of the total aggregate (by weight with adjustments to equivalent volumes of materials of different specific gravities). Additionally, a minimum of 20% plus ¼ inch particles must be non-carbonate.

   b. When coarse aggregate for these mixes are from more than one source or of more than one type of material, proportion and blend them to provide a uniform mixture.

F. Mineral filler if required in the mix to meet gradation requirements, shall conform to the requirements of the N.Y.S.D.O.T. specification section 703-08, Mineral Filler.

G. Performance graded binder (PG Binder) shall meet the requirements of the N.Y.S.D.O.T. specification section 401-2.04, Performance Graded Binder. Unless the type of PG Binder is specified in the Contract Documents, use PG 64-22, or a PG Binder specified in Table 6-4, Performance Graded Binder section of Chapter 6 of the Comprehensive Pavement Design Manual.

H. Reclaimed asphalt pavement (RAP) shall meet the requirements as written in the materials method (MM) 5.16 superpave hot mix asphalt mixture design and mixture verification procedures.

TABLE 403-1 COMPOSITION OF HOT MIX ASPHALT MIXTURES

Mixture	**Base**				**Binder**		**Shim**		**Top3,4**			
Require-ments[1]	**Type 1**		**Type 2**		**Type 3**		**Type 5**		**Type 6, 6F2, 6F3**		**Type 7, 7F2, 7F3**	
Screen Sizes	**General limits % Passing**	**Job Mix Tol. %**	**General limits % Passing**	**Job Mix Tol. %**	**General limits % Passing**	**Job Mix Tol. %**	**General limits % Passing**	**Job Mix Tol. %**	**General limits % Passing**	**Job Mix Tol. %**	**General limits % Passing**	**Job Mix Tol. %**
2 in	100	-	100	-	-		-	-	-	-	-	-
1 ½ in	90-100	-	75-100	±7	100	-	-	-	-	-	-	-
1 in	78-95	±5	55-80	±8	95-100	-	-	-	100	-	-	-
½ in	57-84	±6	23-42	±7	70-90	±6	-	-	95-100	-	100	-
¼ in	40-72	±7	5-20	±6	48-74	±7	100	-	65-85	±7	90-100	
1/8 in	26-57	±7	2-15	±4	32-62	±7	80-100	±6	36-65	±7	45-70	±6
No. 20	12-36	±7	-	-	15-39	±7	32-72	±7	15-39	±7	15-40	±7
No. 40	8-25	±7	-	-	8-27	±7	18-52	±7	8-27	±7	8-27	±7
No. 80	4-16	±4	-	-	4-16	±4	7-26	±4	4-16	±4	4-16	±4
No. 200	2-8	±2	-	-	2-8	±2	2-12	±2	2-6	±2	2-6	±2
PGB Content %[2]	4.0-6.0	0.4	2.5-4.5	0.4	4.5-6.5	0.4	7.0-9.5	0.4	5.4-7.0	NA	5.7-8.0	NA
Mixing &5 Placing Temp. Range, ºF	250-325		225-300		250-325		250-325		250-325		250-325	
Description and Typical Uses	Dense Base: For general use		Open Base: For permeable base layer		Dense Binder: Intermediate layer for general use		Shim: Fine HMA mixture for shimming ruts and leveling		Top Course: Dense course for single course resurfacing of rural, suburban, and urban roadways			

1. All aggregate percentages are based on the total weight of the aggregate.
2. The asphalt content is based on the total weight of the mix. When using slag aggregates in the mix, increase the PGB content accordingly, a minimum of 25% for an all slag mix.
3. 6F2, 6F3, 7F2, 7F3 mix types require friction coarse aggregates, and are required for mainline driving surface courses.
4. For Type 6 and Type 7 (F9) aggregate requirements, Marshall design will not be required. These mix types are suitable where the State's requirements for f9 aggregate apply.
5. Introduce the PG Binder into the pug mill between 225ºF and 350ºF, or as recommended by the PG Binder supplier.

2.03 TACK COAT

A. Tack coat shall meet the requirements of the N.Y.S.D.O.T. specification section 407-2, Materials. The tack coat shall meet the requirements of Table 702-10, Tack Coat. Tack coat shall be on the N.Y.S.D.O.T. approved materials list.

TABLE 702-10 – TACK COAT		
Test Requirements	Min	Max
Sieve Test, %	-	0.10
Residue by Distillation %	38	45
Oil Distillate, volume of total emulsion %	-	2
Test on Residue Distillation: penetration, 77ºF (25ºC), 100g, 5 second	40	90
Suggested spraying temp, ºF	75	150

B. Application of Emulsion Material

1. The asphalt emulsion contained in the distributor tank shall be homogenous. Emulsified asphalts held in storage tanks, drums, or distributors for long periods are subject to settlement. The asphalt emulsion shall be sufficiently agitated or circulated to ensure a homogenous emulsion prior to sampling or application.

PART 3 – EXECUTION

3.01 PREPARATION OF SUBGRADE

A. The subgrade surface is the surface of the road section upon which the select materials and/or sub-base are placed. The Contractor shall be responsible to cut and fill subgrade as required to achieve design grades. The subgrade area shall be prepared in conformance with N.Y.S.D.O.T. section 203, Excavation and Embankment. It shall be the Contractor's responsibility to properly place and compact all materials in the road section and to correct any deficiencies resulting from insufficient or improper compaction of such materials throughout the Contract period. The Contractor shall determine the type, size and weight of the compactor best suited to the work at hand, select and control the lift (layer) thickness, exert control over the moisture content of the material, and other details necessary to obtain satisfactory results. The subgrade shall be compacted to density in accordance with section 310000 – Earthwork, but not less than 95% of modified proctor maximum dry density.

3.02 RCA SUBBASE

A. RCA subbase course shall be placed in conformance with section 304 of the N.Y.S.D.O.T. standard specifications US latest edition.

B. Contractor shall place RCA in a single layer with a minimum compacted layer thickness of 6 inches.

C. When the moisture content is within the limits for proper compaction, compact the material in accordance with the requirements of section 203-3.12 N.Y.S.D.O.T. specifications.

D. If the subbase course is disturbed by frost action prior to paving, re-compact the subbase.

E. If, in the opinion of the Architect, the subbase is damaged or mixed with the subgrade or any other material due to the Contractor's operation the Contractor shall remove such material and replace it with the appropriate subbase at no additional cost to the Owner.

F. Place subbase so that after compaction the top surface of the course does not extend more than ¼" above nor more than ¼" below true grade for the course at any location.

3.03 CONDITIONS FOR PLACEMENT OF ASPHALTIC MATERIALS

A. Weather – Seasonal Limitations

1. The mixing and place of hot-mix asphalt shall be performed only when weather conditions are suitable. When pools of water are observed on the base, mixing and placing of hot-mix asphalt shall not be permitted. The temperature of the surface on which hot-mix asphalt is placed shall be as per Table 402-2.

2. Bituminous concrete pavement placed between November 30th and April 1st shall be subject to the following conditions and regulations:

   a. Approval of the Engineer.
   b. Compliance with Table 402-2 below.
   c. Acceptance of full responsibility by the Contractor for all work so placed.
   d. Providing for such guarantees and deposits as are required by Town regulations.
   e. Guarantee of all work so placed for a period extending up to one year. A notification from the Engineer before the end of the last month of the calendar year following shall be deemed to be within the period of guarantee.

TABLE 402-2 TEMPERATURE AND SEASONAL REQUIREMENTS

Nominal Compacted Lift Thickness	Surface Temperature (Minimum (Note 1)	Seasonal Limits
≤ 1 in.	50ºF	(Notes 2 & 3)
1 in.<Thickness ≤ 3 in.	45ºF	(Notes 2 & 3)
>3 in.	40ºF	None

NOTES:

1. Measure all temperatures on the surface where the mixture is to be placed and the controlling temperature will be the average of three temperature readings taken at locations a minimum of 25 ft apart.
2. Unless otherwise authorized place Top Course only during the period of April 1st up to and including November 30th in the counties of Dutchess, Orange, Rockland, Putnam, Westchester, Nassau, Suffolk, and the City of New York.
3. Unless otherwise authorized place Top Course only during the period of April 15th up to and including October 31st in all counties except as required in Note 2.

3.04 TACK COAT

A. Apply a thin, uniform tack coat under the provisions of N.Y.S.D.O.T. section 407, Tack Coat to surfaces of existing asphalt, Portland cement concrete layers including such areas as adjacent pavement edges, curbing, gutters, manholes, and other structures, immediately prior to place the HMA mixture against them.

B. Apply tack coat on the contact surfaces between all HMA pavement lifts in accordance with N.Y.S. D.O.T. Section 407, Tack Coat, prior to placing HMA mixture regardless of time period between lifts. The only exception to this is the surface of permeable base courses. Paving over a tack coat should not commence until the emulsion has broken (goes from brown to black) or is tacky when touched.

C. The tack coat shall be applied to a prepared clean pavement and in a manner to offer the least inconvenience to traffic and to reduce pickup or tracking of the bituminous material. Upon application the material shall be as uniformly spread across the width of the designated area.

D. The tack coat shall not be applied on a wet pavement surface or when the pavement surface temperature is below the temperature requirements outlined in Table 402-2 Temperature and Seasonal Requirements. To avoid "boil-off" of the water, the asphalt emulsion shall not be heated above 195ºF. The application rate shall be as determined in Table 407-1.

TABLE 407-1 TACK COAT APPLICATION RATES	
Surface Type	**Application Rate (gallons per square yard)**
New Hot Mix Asphalt	0.03 – 0.04
Milled Surfaces	0.05 – 0.06
Portland Cement Concrete	0.05 – 0.06
Vertical Surfaces (curbs, drainage structures, and appurtenances)	0.06-0.07

3.05 SPREADING AND FINISHING OF HMA

A. Lay the mixture upon an approved clean, tack coated surface. The only exception to this is the surface of permeable base courses. Spread and strike off to the established grade and elevation. Use HMA paver(s) to distribute the mixture either over the entire width or over such partial width as may be practicable. Upon arrival at the site, the trucks will dump the mixture into the paver. Immediately spread and strike off to the required width and appropriate loose depth to obtain the required compacted thickness at completion of the work.

B. When the initial pavement course is laid with automatic HMA pavers, guide the paver by a taut reference line positioned at or near the pavement centerline or edge. Erect and maintain the reference line. Support the reference line at approximately 25 foot intervals on tangent sections and at closer intervals on curves. Tension the line sufficiently to remove any sags. A moving reference of at least 30 ft. in length in lieu of a reference line may be used. The moving reference may be a floating beam, ski, or other suitable type such that the resulting pavement layer surface is sufficiently even. A short ski or shoe may also be used for the initial course if a satisfactory fixed reference such as a curb, gutter, or other fixed reference is adjacent to the pavement. When the proposed floating beam or the short ski does not produce the results similar to those obtained using a taut reference line, do not use these devices.

C. Place subsequent pavement courses over the initial course using one of the above methods. In addition, any course in an adjacent lane may be used as the reference for the use of a short ski.

D. The automatic screed controls will not be required where existing grades at roadway intersection or drainage structure must be met, for shoulders, temporary detours, behind curbs, or in other areas where its use is impractical.

E. If there are less than 1500 square yards in the Contract, or the areas to be paved are small and scattered, the HMA mixture may be spread by hand methods. For these areas, dump and spread the mixture such that the compacted thickness meets the specified thickness in the plans.

F. Prior to the beginning of rolling, check the loose mat, adjust any irregularities, and remove and replace all unsatisfactory material.

3.06 COMPACTION OF HMA

A. Immediately after the HMA mixture has been spread, struck off and surface irregularities adjusted, thoroughly and uniformly compact it by rolling. Roll the surface when the mixture is in the proper condition and when the rolling does not cause undue displacement, cracking or shoving. Initially roll all courses with the roller traveling parallel to the centerline of the pavement beginning at each edge and working toward the center. Roll banked curves starting at the low side edge and working toward the super elevated edge.

B. Correct at once any displacement occurring as a result of reversing the direction of the roller, or from other causes, by the use of rakes and addition of fresh mixture as required. Exercise care in rolling so as not to displace the line and grade of the edges of the HMA mixture. To prevent adhesion of the mixture to the drum(s) and pneumatic tires, keep the drum(s) and the pneumatic tires properly moistened with water or water mixed with small quantities of detergent or other approved material. Any petroleum products or solvents having an adverse effect upon the HMA pavement will not be permitted for use.

C. There shall be no visible defects, such as shallow ruts, ridges, roller marks, cracking, tearing, segregation, or any other irregularities as determined by the Architect, in the pavement when the rolling operation is complete. If these defects are present, correct these defects to the satisfaction of the Architect or remove & replace the pavement at no additional cost.

D. Along forms, curbs, headers, walls and other areas not accessible to the rollers, thoroughly compact the mixture with mechanical tampers. On depressed areas, use a trench roller or a small vibratory roller. Cleated compression strips may also be used under the roller to transmit compression to the depressed area.

E. Remove and replace any mixture that becomes loose and broken, mixed with dirt, or is in any way defective with fresh HMA mixture which shall be compacted to conform with the surrounding area. Correct any area showing an excess or deficiency of HMA material to the satisfaction of the Architect.

F. Compaction shall be per Three Roller Compaction Train

1. Initially roll all HMA mixtures with an approved steel-wheel roller operating in a static mode. Overlap the previous roller passes by one-half the width of the roller.
2. Immediately following the initial rolling, roll the mat with an approved pneumatic rubber-tired roller. A minimum of 3 passes of the rubber-tired roller will be required. One pass is defined as one movement of the roller over any point of the pavement in either direction.
3. Immediately following the intermediate rolling, finish roll the mat with a steel-wheel roller to remove all shallow ruts, ridges, roller marks and other irregularities from the surface.
4. Use this compaction method only when the compacted thickness of the finished mat is 4 inches or less. Unless approved by the Architect, the roller speeds shall not exceed 3 mph. when paving multiple lanes simultaneously; increase the required number of rollers proportionately for each additional full lane width unless otherwise permitted by the Architect.

G. The required number of passes listed in Table 403-2, Number of Passes, is recommended and may be increased as necessary to achieve adequate density.

TABLE 403-2 NUMBER OF PASSES		
Pavement Courses	**Three Roller Train (Static)**	
	Steel Wheel Roller	**Pneumatic Roller**
Base (Open Graded Each Lift)	4	3
Base (Dense-Graded)	4	3
Binder (Dense-Graded)	2	3
Top (Dense-Graded All Types)	2	3

END OF SECTION

DIVISION 32 – EXTERIOR IMPROVEMENTS

SECTION 321540 – CRUSHED STONE SURFACING

PART 1 – GENERAL

1.01 DESCRIPTION

A. The Contractor shall furnish and install stone screenings blend for warning tracks in accordance with the plans, specifications and directions of the Engineer.

1.02 RELATED WORK OF OTHER SECTIONS

A. Section 033000 – Cast-in-Place Concrete
B. Section 310000 – Earthwork
C. Section 310001 – Site Work General Provisions
D. Section 329200 – Turf and Grasses

PART 2 – PRODUCTS

2.01 MATERIALS

A. Stone screenings shall be a well-graded bluestone, or limestone, crusher run screenings conforming to the following sizes and matching the existing on-site material.

Screen Size	Percent Passing
¼"	100%
#20	15 - 35%
#200	5 - 8%

PART 3 – EXECUTION

3.01 GENERAL

A. Finished grade shall be crowned from center or pitched in the direction required with a maximum slope of ¼ inch per foot side to side as shown on the plans. There shall be no standing water on any paved surface constructed as part of this project. Upon flooding or significant rain event, any areas found to hold water or wash out shall be corrected to the satisfaction of the Engineer.

B. Perimeter edges of compacted screenings blend areas outside of ballfields shall be formed with 2" x 6", 0.40 PCF, CCA #2 SYP, left in place in accordance with the plans. Inside ballfield areas, the warning tracks shall be formed in accordance with Section 02360. All forms inside ballfield areas shall be removed upon acceptance of project.

C. Screenings shall be installed over 6" depth minimum compacted select fill to the thickness specified. The final compacted thickness shall not be less than four (4) inches.

D. The screenings shall be spread evenly and thoroughly rolled with an approved roller weighing not less than 5 tons, until thorough consolidation is obtained. All depressions shall be filled with screenings and the process of rolling and filling shall continue until a thoroughly compacted uniform surface, satisfactory to the Engineer, is produced. (No segregation of large or fine materials will be permitted, but the screenings as spread shall be well graded with no pockets of fine material.)

Screenings shall be sprinkled with water, at times and in the amounts necessary, to provide consolidation.

3.02 SAMPLES AND TESTING

A. The Contractor shall submit representative samples of the screenings material, with a certified report from an approved testing laboratory stating the results of an analysis of the same material for the approval of the Engineer. The analysis shall include particle size, shape, and a comparison with the material specification.

B. Each batch delivered to the site shall be subject to the approval of the Engineer. The Engineer retains the right to reject all samples either prior to or after testing is complete. Contractor should submit samples for approval prior to testing. Cost of testing shall be the responsibility of the Contractor. Testing shall be approved by the Engineer.

END OF SECTION

DIVISION 32 – EXTERIOR IMPROVEMENTS

SECTION 321813 – SYNTHETIC GRASS SURFACING (BLENDED FIBER)

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provision of the Contract including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY OF WORK

A. The contractor shall provide all labor, materials, equipment, and tools necessary for the complete installation of an infill-type artificial turf system.

1.03 DEFINITIONS

A. ASTM – American Society for Testing and Materials
B. NCAA – National Collegiate Athletic Association
C. STC – Synthetic Turf Council, Inc.
D. NFHS – National Federation of State High School Associations
E. CPSC – Consumer Product Safety Commission
F. ASBA – American Sports Builder Association
G. SUCF – State University Construction Fund

1.04 RELATED WORK

A. Related work is described in the following section of the specifications:

1. Section 033000 – Cast-In-Place Concrete
2. Section 116833 – Athletic Field Equipment
3. Section 329200 – Turf and Grasses

1.05 SUBMITTALS

A. Product Data

1. Synthetic Turf
2. Infill Material
3. Plastic Lumber and Fasteners
4. Base Aggregate
5. Geo-Textile Fabric
6. Under Drainage System
7. All other Synthetic Turf System components
8. Printed installation instructions
9. Installer experience (list of completed projects)
10. All quality assurance requirements
11. Maintenance Manuals – Provide 3 copies. Manual shall include all necessary instructions for the proper care and maintenance of the playing surface
12. Special grooming equipment – use instructions
13. Manufacturer's Statement (see 1.07B)

B. Shop Drawings and Product Data

1. Provide shop drawings of all layout and details
2. Gradation sizes of stone base material and stone finishing material
3. Nailers
4. Shop drawings to include colored marking diagram depicting all field lines, markings, logos, hash marks, numbers and any net or goal sleeve locations.
5. Installation details
6. Edge details including other inserts

C. Samples

1. Synthetic turf, approximate size 12” x 12”
2. Colors of line markings
3. Infill material
4. Filter Fabric
5. Shock pad

D. Test Reports on the System Components

1. Pile Height, Tuft Spacing, Face Weight and Total Fabric Weight: ASTM D418
2. Primary and Secondary Backing Weights and Material: ASTM D418
3. Tuft Bind: ASTM D1335
4. Grab Tear Strength: ASTM D1682
5. Dynamic Cushion Test: ASTM F355, Procedure A (System)
6. Shock Absorbing Properties: ASTM F1936
7. G-Max Test Results: ASTM F355
8. Flammability (Pill test):ASTM D2859
9. Water Permeability: ASTM F1551
10. Independent EN-71 test results for EPDM rubber

E. Certifications

1. Certificate of sub base acceptance by synthetic turf manuf.
2. Warranty of Synthetic Turf System and installation of the system. Warranty shall be also guaranteed by a third party with a rating of “A-” or better.
3. Certificate of Conformity in accordance with the CPSC–16 CFR – General Certification of Compliance for synthetic turf material and infill material.
4. Certification that no lead or lead chromate has been intentionally utilized in the manufacture of synthetic turf system materials.

1.06 QUALITY ASSURANCE AND QUALIFICATIONS

A. The synthetic turf system manufacturer must demonstrate successful experience of at least three (3) installations per year for the last 3 years of this specific type of synthetic turf system and have completed a minimum three (3) installations within a 100-mile radius of subject project location.

1. The synthetic turf system installer must demonstrate successful experience of at least three (3) installations of similar scope to the subject project, and ideally have past experience in the successful completion of a minimum of three (3) installations over one (1) summer construction period.

a. For scope and complexity, similar work is defined as furnishing and installing a new synthetic multipurpose turf field, new bleachers, new press box and all associated work.

b. For size, the bidder should provide evidence that they have performed similar work at dollar amounts approximately equal (or greater) to the amount of bidder’s bid.

c. The determination of relevant contract experience in terms of size, scope and complexity will be at the sole discretion of the University.

B. The synthetic turf manufacturer must certify the designated installation supervisory personnel and his crew members on the project. A letter on manufacturer's letterhead must be submitted affirming the system installer as competent in the installation of the specified system, including seaming and repairs.

C. The synthetic turf system manufacturer shall provide evidence indicating that the specified system has been successfully utilized on work of similar scope to that shown and specified for this project. The synthetic turf surfacing system examples cited shall have been completed and in use for three (3) years without any evidence of failure.

D. Installation of synthetic turf system shall be done only after excavation, storm drainage, and stone base and finishing courses have been completed and approved in writing by the synthetic turf manufacturer. Any damage caused during construction shall be repaired or replaced before acceptance, at no additional cost to the Owner. Evidence of approval by the Manufacturer must be provided to the Architect.

E. The Contractor shall perform percolation testing for site work and stone base installation prior to installation of the synthetic turf system. A minimum of 12 tests throughout the field shall be performed to determine the percolation rate of the stone base. Rate shall be 5 gal/min/sq. ft. Failure to meet these standards will result in reconstruction of the stone base to meet the rate at no extra cost to the owner.

F. Lay test strip and establish compaction and density rates for each course with nuclear gauge before beginning permanent work.

G. Coordinate the installation of the synthetic turf and surrounding surfaces for optimum interface at all edges.

H. Obtain all materials for the specified infill turf system for from the same manufacturer as the synthetic turf.

I. The Contractor shall provide test results from a certified laboratory certifying that the aggregate base course as installed is in accordance with these specifications.

J. The Contractor shall engage in independent testing agency to test and prepare a report on the installed synthetic turf for G-Max rating. The Owner reserves the right to engage an independent Testing Agency for testing as necessary.

K. Refer to SUCF Directive 2-10 for Synthetic Turf Field Systems for additional information and requirements.

1.07 WARRANTY

A. The Contractor shall submit a manufacturer's warranty which guarantees the in-service life, usability, and playability of the specified synthetic turf system for its intended use for a minimum twelve (12) years commencing with the date of substantial completion. The warranty coverage shall be fully insured and shall not be prorated nor limited to the amount of the usage. The warranty submitted shall include the following characteristics:

1. The Contractor shall submit a written manufacturer's warranty: 12-year (8-year plus 4-year supplemental warranty when installed over an approved pad), supported by a 3rd party insured 8-year warranty policy from an A-Rated domestic insurance carrier. Letters of credit are not

permissible. Actual and current policy must be submitted for verification. The warranty shall cover UV fading, degradation, or defects, such as excessive wear or fibrillation, seam rupture dislodgement, or inadequate drainage.

2. The warranty shall be for full replacement value of the synthetic turf system and infill for the entire project area, exclusive of the drainage and stone base material.

3. The warranty shall guarantee a G-Max rating below 130 at the time of installation and below 180 for the remaining term of the warranty. Warranty shall clearly state that if test results show that G-Max rating has not been met, the manufacturer will repair or replace product within the warranty period as necessary to meet those requirements at no cost to the Owner.

4. Turf striping and marking shall be warranted for a minimum period of eight (8) years.

5. Include that the Synthetic Turf specified infill system and materials installed shall meet or exceed the product specification.

6. Include that a warranty from a single source covering defects in the installation, workmanship and all self manufactured system products or procured materials. Further warrant that the installation was done in accordance with both manufacturer's recommendations and any written directives of the manufacturer's on-site designated field supervisory personnel.

B. The Contractor shall submit a statement prepared by the manufacturer, on the manufacturer's corporate letterhead, advising the Owner of the expected or probable useful life of the synthetic turf beyond the coverage period of the warranty.

1.08 MAINTENANCE

A. The manufacturer of the synthetic turf shall be responsible for maintaining of the synthetic turf for one (1) year from the time of acceptance of the synthetic turf field. Maintenance shall include grooming and sweeping of the turf with manufacturer's approved equipment.

B. Maintenance shall commence two (2) months after the acceptance of the synthetic turf. It shall be performed every two (2) months thereafter during the playing season of April 1st through October 31st. It shall recommence at the start of the next playing season and continue every two (2) months thereafter until the one (1) year period is complete.

C. Maintenance visits shall be coordinated with the Athletic Director.

1.09 CERTIFICATION BY THE BIDDER

A. The bidder, by submitting a bid, certifies that there are no present or pending legal actions against the bidder or any subcontracting entity relating to the infringement of patent rights regarding the type of synthetic turf system to be installed under this contract.

PART 2 – PRODUCTS

2.01 GENERAL

A. Design is based on the use of products manufactured by A-Turf. Inc., P.O. Box 157, Williamsville, NY 14231, (888)777-6910, www.aturf.com and the terminology used may include references to that manufacturer's proprietary products. Such reference shall be construed only as establishing the quality of materials and workmanship to be used under this section and shall not, in any way, be construed as limiting competition.

1. Basis of Design: “A-Turf Titan”.

    a. Blade Height: 2.25”
    b. Infill Depth: 1.75” +/-
    c. Pile Weight: 50 oz/yd^2

2. Alternate Acceptable Product: “Legion HP” as manufactured by Shaw Sports Turf, 185 S. Industrial Blvd., Calhoun, GA 30701.

3. Alternate Acceptable Product: “Ultra Blade DFE Extreme” as manufactured by Sprinturf, 146 Fairchild St., Suite 150, Daniel Island, SC 29492.

4. Alternate Acceptable Product: “Field-Turf Vertex FTVT” as manufactured by FieldTurf USA, 175 N. Industrial Blvd. NE, Calhoun, GA 30701.

B. Synthetic turf shall be a minimum of two and one quarter inch (2.25”) long extruded polyethylene/polypropylene blended slit film and monofilament fibers with approximately one and three quarters inch (1.75”) infill (+/- 1/4”) as necessary to meet required G-Max criteria. Turf shall be delivered in minimum fifteen-foot (15’) width rolls of sufficient length to run from sideline to sideline. Turf color shall be green simulating natural grass with bright green alternating every five yards. All playing lines for football (including hash marks, arrows and numbers), soccer, boys lacrosse, girl’s lacrosse, shall be permanent lines incorporated into the synthetic turf (see drawing for list of permanent inlays required). The backing shall consist of porous or perforated primary and secondary backing.

C. Resilient Infill: A resilient infill system, consisting of a specially formulated mixture of approximately 3.0-3.5 lbs. per square foot of SBR crumb rubber and 3.0 lbs. per square foot of sand engineered to provide the look, feel, footing and shock absorption of a natural grass field in ideal conditions.

    1. Resilient infill system shall consist of a mixture of granulated SBR crumb rubber and non-compacting rounded silica sand in the manufacturer’s designated proportion, installed as per the approved manufacturer’s recommended installation system. Ambiently processed rubber and all rubber infill systems are specifically disallowed.

        Infill Rubber shall be SBR crumb rubber, painted green in color, produced from 100% recycled tires as manufactured by Crumb Rubber Manufacturers (CRM) or approved equal and shall meet ASTM D 5644 specifications and as follows:

08 mesh	100.0%
10 mesh	100.0%
16 mesh	53.9%
20 mesh	2.9%
30 mesh	0.30%

    2. Sand shall be clean rounded particles, one hundred percent (100%) passing a #10 sieve and non-passing through a #20 sieve and shall meet ASTM C33 specifications:

        25% coarse, 2.0-5.0 mm particle size
        50% medium, 0.5-2.0 mm particle size
        25% fine, 0.25-0.5 mm particle size

        a. No more than five percent (5%) of the total shall pass through a #200 sieve. The infill mixture composition proposed for the specified system shall be submitted to the architect for approval prior to installation.

3. There shall be a minimum of 6 pounds of infill per square foot: 3 pounds of SBR crumb rubber and 3 pounds of rounded silica sand. This minimum shall not be construed as allowing more, or less infill than what is characteristic of the accepted synthetic turf system as marketed and warranted by the manufacturer, so longs as the specified GMAX and HIC criteria are met.

D. Seams

1. Seam of each 15' foot wide panel shall be attached to the next seam to form the fabric of the field. **Seams shall be sewn with high strength sewing thread**.

E. Adhesives

1. All adhesives used in bonding the system together should be resistant to moisture, bacterial and fungus attacks, meeting local environmental requirements and be resistant to ultraviolet rays. The bonding or fastening of all system components shall provide a permanent, tight, secure and hazard free, athletic playing surface.

F. Seaming Tape (For Inlays Only)

1. The tape shall be comprised of a fabric that shall be installed below the backing material on both sides of the inlay. Adhesive shall be applied to the seaming tape to provide a bond between adjacent turf panels of sections. The fabric used for seaming tape shall provide dimensional strength and surface texture to bond well with the adhesive.

2.02 RESILIENT UNDERLAYMENT (PRE-MANUFACTURED SHOCK PAD)

A. Shock Pad shall be "Brock Shock Pad Series 14" or approved equal. Manufactured by Brock USA LLC, 3090 Sterling Circle, Boulder, Co 80301, 303-544-5800, www.brockusa.com.

1. Description: Resilient expanded polypropylene shock pad material
2. Size: Interlocking panels, 57.6 x 48.8 inches overall dimensions
3. Area: Net coverage per panel 15.9 ft²
4. Thickness: 0.55" (14 mm)
5. Panel weight: approximately 2.8 lbs/panel

2.03 TIE-DOWN NAILER

B. Recycled plastic lumber shall be fabric from on hundred percent (100%) High Density Polyethylene (HDPE) and low density Polyethylene (LDPE) recycled polyethylene, including UV-inhibiting pigment.

C. Composition and mechanical properties shall be as follows:

Minimum High Density Polyethylene:	70%
Tensile Strength (ASTM D638):	3000 psi
Compressive Strength (ASTM D6108)	6000 psi
Flexural Modules of Elasticity (ASTM 6109):	200,000 psi

D. The Bulk Density and Specific Gravity of the recycled plastic lumber shall conform to the acceptable standards determined by the standard test method in ASTM D611. Recycled plastic lumber shall not absorb moisture, corrode, rot, warp, splinter, or crack and the surface shall not be slippery when wet. The recycled plastic lumber shall not contain any material that will be irritating when in contact with the skin. Cross sections shall not show wide deep gaps or holes and the surface shall remain unpainted. The color shall be Slate Gray, unless otherwise indicated on the plans.

2.04 BASE AGGREGATE

A. Base aggregate shall consist of a coarser base and a finer top layer as shown in the details.

1. Aggregate shall consist solely of crushed ledge rock and shall be broken stone or gravel free draining well ground, uniformly mixed, and washed. The total thickness of the open graded base stone aggregate shall be five inches (5") minimum. Top lift material shall consist of sand stone for sizes less than 1/4" and shall be 2" thick or as required to obtain a total 7" stone base construction. Materials shall meet the gradations shown below.

Bottom Lift (Base Stone)

Percent Passing by Weight	Sieve Size
100	2"
95-100	1 1/2"
90-100	1"
70-95	3/4"
60-85	1/2"
30-50	3/8"
20-40	#4
10-30	#8
5-20	#40
0-5	#200

Top Lift (Finishing Stone)

Percent Passing by Weight	Sieve Size
100	1/4"
70-85	#4
45-60	#8
15-35	#16
10-15	#40
5-10	#100
0-5	#200

B. The aggregate must contain three and one-half to four percent (3-1/2-4%) moisture content to ensure that fine particles don't migrate and facilitate proper compaction. The Contractor shall provide certification from the source plan that aggregate meets this requirement. If deliveries of base aggregate show segregation of sizes, material shall be deposited in stockpile and thoroughly mixed prior to installation. **Bank run gravel, rounded sands and recycled concrete material shall be rejected for use as a base aggregate.**

C. **Both lifts of gravel/sand SHALL be DAMP when graded.**

2.05 NON-WOVEN FILTER FABRIC (Pervious)

A. Shall be synthetic and rot proof, and shall be AEF 480 HS, as manufactured by American Engineering Fabrics, Inc. (AEF), FX-400 HS, as manufactured by Carthage Mills; of 1/0, as manufactured by Mirafi, Inc., or approved equal.

B. Fabric shall meet the following minimum properties:

Property	Method	Value
Grab Tensile Strength	ASTM D4632 lbs.	120
Grab Tensile Elongation	ASTM D4632 %	50

Trapezoidal Tear Strength	ASTM D4533 lbs.	50
Mullen Burst Strength	ASTM D3786 psi	225
Puncture Strength	ASTM D4751 lbs.	65
Apparent Opening Size (AOS)	ASTM D4751 U.S. Sieve	70
Permittivity	ASTM D4491 sec^2	1.8
Permeability	ASTM D4491 cm/sec	0.21
Flow Rate	ASTM D4491 $gal/min/ft^2$	135
UV Resistance (at 500 hours)	ASTM D4355 % strength	70

2.06 SLOTTED POLYETHYLENE PIPE

A. High density polyethylene pipe shall have full circular cross-section with an outer corrugated perforated pipe wall and an essentially smooth inner wall (waterway). Corrugations for these sizes may be either annular or spiral. Size shall conform to the AASHTO classification “Type SP” (which describes pipe with a smooth waterway and Class 2 perforations).

B. Pipe manufactured for this specification shall comply with the requirements for test methods, dimensions, and markings found in AASHTO Designations M252 and M294. Pipe and fitting shall be made from Virgin PE compounds that conform with the requirements of cell Class 324420C, as defined and described in ASTM D3350. Pipe and fitting shall be as manufactured by Advanced Drainage Systems, Ludlow Massachusetts, or approved equal. The minimum parallel plate stiffness values, when tested in accordance with ASTM D2412 shall be as follows:

Diameter	Pipe Stiffness
4” (100mm)	50 psi (310 Kpa)
6” (150mm)	50 psi (310 Kpa)
8” (200mm)	50 psi (310 Kpa)
12” (375mm)	50 psi (310 Kpa)

C. Sock: The perforated pipe shall have a “DC Sock” a polyester machine knitted envelope factory applied and ready for installation.

D. Fittings: The fittings shall not reduce or impair the overall integrity or function of the pipeline. Fittings may be either molded or fabricated. Common corrugated fittings include in-line joint fittings, such as couplers and reducers, and branch or complimentary assembly fittings such as tees, wyes, and end caps. These fittings may be installed by carious methods, such as snap-on, screw-on, bell and spigot, and wrap around. Couplings of the pipes shall be performed using Standard ADC (advanced drainage systems) N-12 split coupler PRO LINK ST, or PPO LINK 10.8 or PRO LINK 5. Only fitting supplied or recommended by the pipe manufacturer shall be sued. Where designated on the plans, a neoprene or rubber gasket shall be supplied.

2.07 DRAINAGE PANELS

A. Drainage panels shall be polyethylene perforated panels wrapped in non-woven filter fabric.

B. Panels shall be fabricated from polyethylene compounds that conform with the requirements of the minimum cell classification of 323410C of 933410C as defined and described in ASTM D3350. The compound ingredients may consist of lubricants, stabilizers, non-poly (ethylene) resin modifiers, and pigments essential for processing, property control and coloring.

C. Reprocessed Material – Clean, reprocessed material may be used provided that the oblong corrugated polyethylene pipe and fittings produced meet all the requirements of this specification.

D. The nominal size of the oblong corrugated pipe shall be 12” (305mm) and 2” (25.4mm) thick.

E. The perforations shall be cleanly cue and uniformly spaced along both sides of the oblong pipe. The perforation specifications are as follows:

1. Slot Length (Max) – 1.125 (29mm), Slot Width (Max) – 0.150” (4mm), Water Inlet Area (Min.) – 15.0 sq. in./ft.

F. Fittings included in-line couplings and outlets, side outlet and end caps.

1. Fittings shall not reduce the inside open flow area of the oblong pipe.

2. Couplings shall be corrugated to match the corrugations of the oblong pipe and shall provide sufficient longitudinal strength to assure alignment and prevent separation of the joints.

G. Filter fabric shall be a non-woven polypropylene geotextile and shall meet the following minimum properties:

Property	Method	Value
Grab Tensile Strength (lbs)	ASTM D4632	120(weakest dir.)
Grab Elongation (%)	ASTM D4632	60(weakest dir.)
Trapezoidal Tear (lbs)	ASTM D4533	40
Mullen Burst (PSI)	ASTM 3786	90
Puncture (lbs)	ASTM D4833	30
Permittivity (sec^2)	ASTM D4491	0.7
AOS (U.S. Sieve Size)	ASTM D4751	60
U.V. Resistance (% strength retained after 150 hours xenon arc)	ASTM D4435	70
Mass Per Unit Area	ASTM D4435	3.4

2.08 PERMANENT INLAYED MARKINGS

A. Permanent inlayed markings shall be constructed for the following sports in this priority and color:

1. Softball – White
2. Soccer – White
3. Women’s Lax – Orange
4. Men’s Lax – Light Blue
5. Youth Soccer – Yellow
6. Youth Lacrosse - Orange
7. The owner reserves the right to change the above colors during the shop drawing submittal phase.

2.09 LOGO/GRAPHICS

A. Logos, Lettering and Graphics as detailed on the drawings.

2.10 REPAIR MATERIALS

A. At no extra cost to the Contract Sum, the contractor shall provide to the Owner the following materials for maintenance and minor repairs:

1. Turf fabric (green) – 1 piece, 15’ wide x 20’ long.
2. Turf lines (all colors on approved plans) – 4” wide x 100’ long.
3. Infill materials – 500 lbs. (1 super sack)
4. Seaming tape and glue – sufficient for 200 linear feet of seams.

B. If the Owner opts not to retain these materials, then the contractor shall dispose of them.

PART 3 – EXECUTION

3.01 GENERAL

A. The installation shall be performed in full compliance with approved shop drawings.

B. Only manufacturer-approved technicians skilled in the installation of specified infill athletic caliber synthetic turf systems working under the direct supervision of the manufacturer's authorized supervisors shall undertake the placement of the system.

C. The surface to receive the synthetic turf shall be inspected and certified in writing by the manufacturer/installer as ready for the installation of the synthetic turf system and must be perfectly clean as installation commences and shall be maintained in that condition throughout the process.

D. Installation supervision shall have a minimum of five (5) years experience in the supervision of the installation of the respective specified synthetic turf infill system.

E. All components of the specified synthetic turf infill system shall be installed in strict accordance with the synthetic turf system manufacturer's technical specifications and instructions.

F. Any variations and/or modifications from synthetic turf infill system specifications and installation procedures outlined under these sections shall be approved in writing by the Architect and manufacturer's on-site authorized supervisory personnel prior to proceeding with the system installation.

3.02 INSTALLATION

A. Subgrade:

1. The area to receive the resilient synthetic turf shall be excavated to the correct depth as indicated on the drawings, including peripheral drainage trenched or slotted polyethylene pipe. The subgrade shall be laser graded and pitched to ensure positive drainage (on average one-half percent (½%) from the center to the peripheral slotted pipe drainage lines), as indicated on the drawings and all finished subgrade elevations verified with laser leveling instruments. The Contractor shall be careful to avoid over excavation.

2. When required, controlled fill shall be placed and compacted in accordance with Section 310000 – Earth Work, but to not less than 90% modified proctor dry density.

3. The Architect may require percolation tests of the finished subgrade. The Contractor must allow for such testing in his construction schedule.

4. Filter fabric shall be rolled directly over the prepared subgrade and the peripheral drainage trench, overlapping all seams a minimum of six inches (6") in all directions.

B. Pipe:

1. All slotted polyethylene pipe shall be laid in reasonably close conformity to line and grade and shall have a full, firm and even bearing at each joint and along the entire length of pipe accordance with the plans and specifications. Joint misalignment shall not result in offsets, in the interior smooth liner, greater than one quarter inch (1/4").

2. Pipe laying shall begin at the downstream end and progress upstream. Any single run of pipe, excluding end sections, shall consist wholly of the same type materials. No section of pipe used shall be less than three feet (3') in length. Installation of the pipe shall be in accordance with ASTM Recommended Practice D2321 and manufacturer's written instructions.

3. Join pipes and fittings with couplings for soil tight joints, keeping inside of pipes clean and free of debris.

C. Drainage Panels (only when indicated on the drawings):

1. Install drainage panels over fiber fabric in the configuration and spacing indicated on the drawings. Panels shall be laid flat in close conformity to line and grade and shall have a full, firm and even bearing at each joint and along the entire panel. Panels shall be laid from the point of connection to collection pipes and progress up the slope to the center of the field. Material shall be installed in strict accordance with the manufacturer's instructions.

2. Drainage panel shall be backfilled with porous aggregate and compacted in accordance with the specifications.

D. Base Aggregate

1. The base aggregate shall be installed in one (1) or two (2) lifts as required by the turf manufacturer, over the filter fabric and compacted to at least 90% modified proctor dry density, maintaining a consistent slope as shown on the plan from the centerline of the field to the sideline.

2. The base aggregate must be free draining consistent with the vertical draining requirements of the synthetic turf manufacturer. The Contractor shall employ laser leveling devices to determine the correct subgrade and finished grade elevations of both first and second lift of base aggregate.

3. The synthetic turf manufacturer's representative must approve the subsurface prior to installation of the stone base as well as the base aggregate installation prior to installation of the synthetic turf.

E. Resilient Shock Pad

1. After the choker layer grades have been approved and inspected, the resilient ShockPad shall be installed from sideline to sideline.

   a. Equipment and personnel shall take extreme care to minimize disturbance of the stone base during ShockPad installation.

   b. All operations shall work from behind the installed ShockPad or from adjacent, pre-installed pad surface.

   c. One head seam shall be allowed per length. Head seams shall be staggered so as not to be within 10' of the previously installed roll.

   d. The head seam shall overlap approximately 4 inches on original roll out. Second and subsequent rolls shall be rolled out within 1 inch, or less, of the previous roll and allowed to expand or contract before manually sliding in place.

   e. After allowance for expansion or contraction, the padding shall slide into place so as to touch the edge or seam of the previous. Care shall be taken so as not to disturb the choker layer material when butting the seams together.

2. The Resilient ShockPad shall not receive a final cut or edging detail until the material has relaxed/expanded in direct sunlight for a minimum of six hours.

    a. No open seams shall exceed 1/4" (in expanded state) after final seam or end cutting is complete.

    b. Padding material shall stop just short of the exposed nailer board.

3. The Resilient ShockPad shall be inspected by the Field Builder after completion to insure the surface is smooth with only minor bumps from stone particles or other material protruding from underneath that will not show up once the turf is laid over top.

    a. Expansion bubbles and open seams shall be repaired prior to final inspection.

    b. Repeat inspections shall be carried out prior to each roll of synthetic turf being installed.

F. Tie-Down Nailer (where shown)

1. Recycled Plastic Lumber Edging (2” x 6” Nom.) shall be attached to the face of the perimeter concrete curb and secured with 3/8” Dia. X 6” LG. galvanized steel or stainless steel expansion bolts, spaced 2’-0” on center, staggered.

G. Synthetic Turf

1. The full width rolls of turf shall be laid out across the field and the edges attached to the recycled plastic lumber tie-down nailer with a nail gun, as per manufacturer’s directions, at a maximum one foot (1’ intervals). The seams shall be double sewn or glued as per manufacturer’s system application and recommendations and head seams, other than at sidelines, shall not be acceptable. Glued seams shall have a minimum 12” wide reinforcing tape (6” under each side). All seams shall be transverse to the field direction, i.e. run perpendicularly across the field. Seams shall be flat tight, and permanent with no separation or fraying. Permanent playing marking lines shall be laid out and inlaid into the turf as shown on the drawings.

H. Infill

1. The completed specified synthetic infill turf field shall be brushed with a motorized nylon rotary broom and the infill material immediately installed with a minimum four-foot (4’) width drop spreader or other approved broadcast equipment. The infill shall be applied in a minimum three (3) lifts to at least one and one-half (1-1/2”) depth, totaling at least six pounds per square foot (6 lbs. s.f.) of infill material, and the infilled are brushed between each lift.

3.03 CLEAN UP AND PROTECTION

A. Contractor shall provide the labor, supplies and equipment necessary for final cleaning of surfaces and installed items.

B. The Contractor shall keep the area clean throughout the project and clear of debris.

NOTE: The Contractor shall not allow vehicles carrying or contaminated by general fill, structural fill, topsoil or natural soil materials to enter or cross the synthetic turf area after installation of soil fabric or approved subgrade.

C. Surfaces, recesses, enclosures, etc. shall be cleaned as necessary to leave the work area in a clean, immaculate condition ready for immediate occupancy and use by the Owner.

END OF SECTION

DIVISION 32 – EXTERIOR IMPROVEMENTS

SECTION 323113 – VINYL COATED CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 01, General Requirements, are included as a part of this Section as though bound herein.

1.02 SUMMARY

A. The work includes all labor, materials, equipment, and appliances necessary to furnish and install the various height chain link fences and gates as shown on the plans, detailed in the specifications, and directed by and to the approval of the District.

1.03 RELATED SECTIONS

A. Section 033000 – Cast-In-Place Concrete
B. Section 310000 – Earthwork
C. Section 310001 – Site Work General Provisions
D. Section 329200 – Turf and Grasses

1.04 SUBMITTALS

A. Comply with the requirements of Section 013300 and as modified below.

B. Manufacturer's Data:

1. Submit copies of manufacturer's product data, specifications, installation instructions, and copy of manufacturer’s warranty.

C. Shop Drawings: Layout of items with dimensions, details, recommended footing details, finishes of components, and accessories.

PART 2 - MATERIALS

2.01 FENCE MATERIALS

A. Fabric: The fabric shall have knuckled edges at the top and bottom and shall be fastened to the top rail, and bottom rail when provided, which shall be run through loop caps.

1. PVC coating bonded and thermally fused to metallic coated steel core wire: ASTM F668 Class 2b, 7 mil thickness. Core wire tensile strength 75,000 psi. 2" diamond mesh, 9-gauge core wire with a diameter of 0.148" and a breakload of 1,290 lbs except where noted differently on the plans.

B. Posts: Line, terminal (corner and end), and gate posts shall be a minimum of 3'-8" greater in length than the fabric height in order to be embedded in 3'-6" deep concrete footings.

1. Line Posts: Line posts shall be 2.5 inch O.D. steel pipe, weight 3.65 lbs. per foot, copper bearing and hot dip galvanized; PVC-Coated finish in accordance with ASTM F1043;

supplemental color coating of 10-15 mils of thermally fused PVC in color as selected by the Architect. Complete with all necessary fittings.

2. Terminal Posts: End and corner posts shall be 3.0-inch O.D. steel pipe, weight 5.79 lbs. per foot, copper bearing and hot-dip galvanized; PVC-Coated finish in accordance with ASTM F1043; supplemental color coating of 10-15 mils of thermally fused PVC in color as selected by the Architect. Complete with all necessary fittings.

3. Gate Posts: Gate posts shall be copper bearing steel, hot-dip galvanized; PVC-Coated finish in accordance with ASTM F1043; supplemental color coating of 10-15 mils of thermally fused PVC in color as selected by the Architect. Complete with all necessary fittings. Conforming to the following sizes, except where noted differently on the plans:

   a. Gate leaf up to 3 ft. wide: Schedule 40, 2.875" o.d., 5.79 lbs. per lineal foot.

   b. Gate leaf over 3 ft. to 5 ft. wide: Schedule 40, 4.0" o.d., 9.10 lbs. per lineal foot.

   c. Gate leaf over 5 ft. to 10 ft. wide: Schedule 40, 6.625" o.d., 18.97 lbs. per lineal foot.

C. Gates: Gate frames shall be 2.0-inch O.D., copper bearing fabric to match the fence line. All frames shall be hot-dipped, galvanized 1.8 oz. zinc/s.f. uncoated surface, conforming to ASTM 120, Schedule 40. PVC-Coated finish in accordance with ASTM F1043; supplemental color coating of 10-15 mils of thermally fused PVC in color as selected by the Architect. All gates to be provided with necessary hinges and gate padlock fittings. Provide diagonal bracing when gate leafs are over 4'-0" wide.

D. Bracing: Braces not less than 1 5/8-inch O.D., weighing not less than 2.27 lbs. per foot, or approved equivalent section, complete with 3/8-inch galvanized truss rod and turnbuckle, all PVC coated, shall be installed at all corner, end, and gate posts, and as required at changes of vertical grade.

E. Post Tops: All posts shall be fitted with heavy malleable iron or pressed steel tops, PVC coated. Tops shall permit passage of top rails.

F. Bottom Rail: Bottom shall be 1 5/8-inch O.D., copper bearing steel pipe, hot-dipped, galvanized, weight 2.27 lbs. per foot. PVC-Coated finish in accordance with ASTM F1043; supplemental color coating of 10-15 mils of thermally fused PVC in color as selected by the Architect. Bottom rail shall be installed between posts with appropriate fittings and accessories.

G. Top Rail: Top rail shall be 1 5/8-inch O.D., copper bearing steel pipe, hot-dipped, galvanized, weight 2.27 lbs. per foot. PVC-Coated finish in accordance with ASTM F1043; supplemental color coating of 10-15 mils of thermally fused PVC in color as selected by the Architect. Top rail shall pass through the line post tops and form a continuous brace from end to end of each run of fence. Couplings shall be outside sleeve type and at least seven inches long; one coupling every five shall contain a heavy spring to take up expansion and contraction of the top rail.

H. Truss Rods: Galvanized steel rods, 5/16" min. diameter.

I. Tension (stretcher) bars: one piece lengths 2" shorter than fabric height, 3/16" x 3/4", hot dip galvanized, PVC coated.

J. Wire ties and clips: 9-gauge galvanized steel wire for attachment of fabric to line posts. Double wrap 13 gauge for rails and braces. Hog ring ties of 12 1/2 gauge for attachment of fabric to tension wire. All PVC coated

K. Nuts and bolts are galvanized but not vinyl coated. Utilize PVC paint color coat nuts and bolts.

L. Fence Post Footings:

1. The line, corner, and end gate posts shall be as detailed on the plans. All concrete footings shall be 3,000 psi., air-entrained. Footings shall be crowned to shed water and protect posts at ground line.

a. If footings are not detailed on plans, they shall be provided with a diameter 4 times greater than the outside dimension of post, 3'-6" deep, or deeper as the post condition warrants.

2.02 TENNIS COURT WINDSCREEN

A. Provide tennis court windscreens at full perimeter of tennis courts if the work of this section is related to tennis court construction as indicated on the drawings.

1. Manufacturer: Douglas Industries, Eldridge, Iowa.

a. Model: VCP-9 Windscreen

2. Fabric:

a. Open mesh vinyl-coated (50%) polyester with 70% windbreak, 320 x 200 tensile strength, 9 x 12 inch weave, 7 oz. per square yard. Color as selected by Architect.

b. 3 ply hems, vinyl coated polyester reinforced and double sewn with heavy duty polyester thread.

c. No. 2 brass grommets.

d. Douglas AVR reinforced, die-cut, heat sealed air vents.

3. Fasteners:

a. Lightweight, self-locking plastic fasteners with 150lb. break strength, C-snaps, and lacing cord.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify areas to receive fencing are completed to final grades and elevations.

B. Ensure property lines and legal boundaries of work are clearly established.

3.02 CHAIN LINK FENCE FRAMING INSTALLATION

A. Install chain link fence in accordance with ASTM F567 and manufacturer's instructions.

B. Concrete Set Posts: Drill hole in firm, undisturbed earth to approximately 6" deeper than post bottom. Excavate deeper as required for adequate support in soft and loose soils, and for posts with heavy lateral loads. Set post bottom 36" below surface when in firm, undisturbed soil. Place concrete around posts in a continuous pour. Trowel finish around post. Slope to direct water away from posts.

1. Line posts shall be spaced at uniformly at approximately 8 ft. o.c., maximum of 10'-0" o.c., unless otherwise noted.

2. Terminal posts shall be located at each fence termination and change in horizontal or vertical direction of 30 degrees or more.

    a. Install horizontal pipe brace at mid-height for fences 6’ and taller, at first section on each side of terminal, corner, and gate posts. Firmly attach with appropriate fittings. Install diagonal truss rods at these points. Install braces and adjust truss rod, ensuring posts remain plumb.

C. Check each post for vertical and top alignment and maintain in position during placement and finishing operation.

D. Rails: Continuous top rails in 21 ft. sections. Bottom and mid rails (if required), single lengths between posts.

    1. Install mid-rails for fabric heights of 10 ft. and over.

E. Gates: Install gates plumb, level and secure for full opening without interference. Attach hardware by means which will prevent unauthorized removal. Adjust hardware for smooth operation.

3.03 CHAIN LINK FABRIC INSTALLATION

A. Fabric: Install fabric on secure side and attach so that fabric remains in tension after pulling force is released. Leave approximately 1" between finish grade and bottom selvage. Attach fabric with 9 ga. galvanized PVC coated wire ties or clip to line posts at 12" on center and to rails, braces, and tension wire at 12" on center.

B. Tension (stretcher) bars): Pull fabric taut; thread tension bar through fabric and attach to terminal posts with bands spaced maximum of 15" on center.

3.04 ACCESSORIES

A. Tie wires: Bend ends of wire to minimize hazard to persons and clothing.

B. Fasteners: Install nuts on fence side opposite fabric side for added security.

3.05 CLEANING

A. Clean up debris and unused material and remove from site.

3.06 RESTORATION

A. Any areas of the project site that are disturbed by the work shall be restored to the condition in which they existed prior to this work.

B. Grass areas disturbed by this work shall be restored with topsoil & seed.

END OF SECTION

DIVISION 32 – EXTERIOR IMPROVEMENTS

SECTION 323113.44 – TENSION NETTING BACKSTOPS

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Provide all equipment and materials and do all work necessary to furnish and install the tension netting backstop, as indicated on the drawings, and as specified herein. Athletic equipment shall include, but not be limited to:

1. Custom Pole-to-Pole Tension Ball Safety Netting System with Ultra Cross Netting and fastening Accessories.

1.02 RELATED WORK

A. Examine contract documents for requirements that affect work of this section. Other specification divisions and sections that directly relate to the work of this section include, but are not limited to:

1. Section 033000 – Cast-In-Place Concrete
2. Section 310000 – Earthwork
3. Section 323113 – Vinyl Coated Chain Link Fences and Gates

1.03 REFERENCES

A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.

1. National Federation of State High School Associations (NFHS)
2. National Collegiate Athletic Association (NCAA)
3. International Association of Athletics Federations (IAAF)
4. American Sports Builders Association (ASBA)
5. Manufacturers Data and Recommended Installation Requirements

1.04 SUBMITTALS

A. Manufacturers Product Data

1. Provide manufacturers product data prior to actual field installation work, for Architects or Owners representative’s review.

B. Shop Drawings

1. Provide sealed drawings of the manufacturers recommended installation and foundation requirements prior to actual field installation work, for Architects approval.

1.05 QUALITY ASSURANCE

A. Manufacturers warranties shall pass to the Owner and certification made that the product materials meet all applicable grade trademarks or conform to industry standards and inspection requirements. The Manufacturer shall have a current American Sports Builders Association (ASBA) Supplier Certificate of Distinction designation.

1.06 PRODUCT DELIVERY AND STORAGE

A. Materials delivered to the site shall be examined for damage or defects in shipping. Any defects shall be noted and reported to the Owners representative. Replacements, if necessary, shall be immediately re-ordered, to minimize any conflict with the construction schedule. Sound materials shall be stored above ground under protective cover or indoors to provide proper protection.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Custom TNPPUC – Pole-to-Pole Tension Ball Safety Netting System with Ultra Cross Netting and Accessories as Manufactured and/or Supplied by:

Sportsfield Specialties, Inc.
P.O. Box 231
41155 State Highway 10
Delhi, NY 13753
p. 888-975-3343
f. 607-746-8481
www.sportsfieldspecialties.com
Or Architect approved equal.

2.02 COMPONENTS

A. Pole-to-Pole Tension Ball Safety Netting System Upright Support Posts and Pole Structures – Fabricated, Sized and Configured as Required:

1. Height Above Finish Grade – 30’-0”
2. Super Durable Powder Coated Black Finish with Enhance Resistance to UV and Fade
3. Ground Sleeve, Base Plate or Permanent Embedment Mount
4. Hot Dipped Galvanized Assembly Hardware - Quantities, Sizes and Configurations as Required

B. Pole-to-Pole Tension Ball Safety Netting System Wire Rope Support Structure:

1. Length, 39’-8” long x 21’-2” long x 39’-8” long. Dimensions are plus or minus.
2. Height, 30’-0” high
3. 7 x 19 GAC Galvanized Aircraft Cable - 5/16” Diameter Main Horizontal Support, 9,800 lb. Minimum Breaking Strength, 3,267 lb. Minimum Working Load Limit
4. 7 x 19 GAC Galvanized Aircraft Cable - 1/4” Diameter Vertical and Bottom Horizontal Supports, 7,000 lb. Minimum Breaking Strength, 2,333 lb. Minimum Working Load Limit
5. Hot Dipped Galvanized Attachment and Assembly Hardware - Quantities, Sizes and Configurations as Required

C. Pole-to-Pole Tension Ball Safety Netting System Net and Rope Bound Border:

1. Length, 39’-8” long x 21’-2” long x 39’-08” long. Dimensions are plus or minus.
2. Height, 30’-0” high
3. Ultra Cross Knotless Netting
4. Dyneema® Ultra-High Molecular Weight Polyethylene (UHMWPE) SK-75 Black Fiber Construction
5. 4 Ply, 1.2 mm (0.0472”) Diameter Twine
6. 95% Open Mesh Area (See-Through Visibility)
7. 58,445 psi Minimum Breaking Strength

8. 30% Maximum Elongation at Break
9. 1-3/4” (44 mm) Square Mesh Size, 0.009 lbs. per Square Foot
10. 4-Strand, Braided, Continuous Monofilament Dyneema® Fiber
11. Black Multi-Filament Polypropylene Solid Braid Derby Rope Sewn Binding on Perimeter Edges - 1/4” Diameter, 530 lb. Minimum Breaking Strength
12. Urethane Black Bonded Finish
13. Strong Resistance to Ultraviolet (UV) Light Degradation
14. Excellent Resistance to Chemicals and Water Absorption

D. Included Accessories:

1. Hot Dipped Galvanized Attachment and Assembly Hardware - Quantities, Sizes and Configurations as Required
2. Black Rope for Net Binding Attachment to Wire Rope Support Structure – Quantities and Configurations as Required
3. Stamped and Sealed Drawings and Calculations by a Licensed Professional Engineer of Record in the State of Project Location
4. Model Specific Hardware Kit and Installation Instructions
5. One (1) Year Limited Manufacturer’s Product Warranty

PART 3 – EXECUTION

3.01 INSTALLATION OF EQUIPMENT

A. All Pole-to-Pole Tension Ball Safety Netting Systems with Ultra Cross Netting and Accessories shall be installed as recommended per manufacturer's written instructions and as indicated on the drawings.

B. Concrete anchoring foundations shall be in accordance with plan details.

C. The system shall be installed plumb level and taught. Provide S.S. wedge type anchors between post and post sleeves as needed.

D. The installer should have a minimum of five (5) ball safety netting system installations or similar experience in the previous three (3) years.

END OF SECTION

DIVISION 32 – EXTERIOR IMPROVEMENTS

SECTION 329200 – LAWN AND GRASSES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section Includes:

1. Seeding and Lawn Establishment.
2. Topsoil.

1.03 DEFINITIONS

A. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.

B. Finish Grade: Elevation of finished surface of planting soil.

C. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

D. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

E. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

F. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

G. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill before planting soil is placed.

H. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

I. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil, but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.04 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name and percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

C. Product Certificates: For soil amendments and fertilizers, signed by product manufacturer.

D. Qualification Data: For landscape installer.

E. Material Test Reports: For existing surface soil and imported topsoil.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful lawn establishment.

1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when planting is in progress.

B. Soil-Testing Laboratory Qualifications: An independent laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.

C. Topsoil Analysis: Furnish soil analysis by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; deleterious material; pH; and mineral and plant-nutrient content of topsoil.

1. Report suitability of topsoil for lawn growth. The report shall state the recommended quantities of nitrogen, potash nutrients, and soil amendments to be added to produce a satisfactory topsoil. The use of phosphorous shall be limited to the establishment of new lawns and shall be based on a topsoil test indicating its necessity and which outlines specific application rate recommendations.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Seed: Deliver seed in original sealed, labeled, and undamaged containers.

1. Store materials in clean, dry, location protected from exposure to direct sunlight and within manufacturer’s recommended temperature ranges.

1.07 PROJECT CONDITIONS

A. Planting Restrictions: Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.

C. Apply products during favorable weather conditions according to manufacturer's written instructions.

1.08 LAWN MAINTENANCE

A. Begin maintenance immediately after each area is planted and continue until acceptable lawn is established, for periods as outlined on the construction drawings and in no case for less than the following periods:

1. Seeded Lawns: 30 days from date of Substantial Completion.

B. Maintain and establish lawn by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations. Roll, re-grade, and replant bare or eroded areas and re-mulch to produce a uniformly smooth lawn.

1. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch. Anchor as required to prevent displacement.

C. Watering: Provide and maintain temporary piping, hoses, and lawn-watering equipment to convey water from sources and to keep lawn uniformly moist to a depth of 4 inches.

1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
2. Water lawn at a minimum rate of 1 inch per week.

D. Lawn Post-fertilization: Apply fertilizer after initial mowing and when grass is dry.

1. Use fertilizer that will provide actual nitrogen of at least 1 lb./1000 sq. ft. minimum to lawn area.

PART 2 - PRODUCTS

2.01 SEED

A. Grass Seed: Fresh, clean, dry, new-crop seed complying with the Association of Official Seed Analysts (AOSA's) "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.

B. Seed Species: As per construction drawings.

2.02 TOPSOIL

A. Topsoil: As per construction drawings. Note that all topsoil source options outlined below shall be verified by laboratory testing and results shall be submitted to Landscape Architect for review and approval prior to use.

1. Topsoil Source: Reuse surface soil stockpiled on-site. Verify suitability of stockpiled surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.
   a. Supplement with imported or manufactured topsoil from off-site sources when quantities are insufficient. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep; do not obtain from agricultural land, bogs or marshes.

2. Topsoil Source: Import topsoil or manufactured topsoil from off-site sources. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep; do not obtain from agricultural land, bogs or marshes.
3. Topsoil Source: Amend existing in-place surface soil to produce topsoil. Verify suitability of surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.

2.03 INORGANIC SOIL AMENDMENTS

A. Lime: ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:

1. Class: O, with a minimum of 95 percent passing through No. 8 (2.36-mm) sieve and a minimum of 55 percent passing through No. 60 (0.25-mm) sieve.
2. Provide lime in form of ground dolomitic limestone.

B. Sulfur: Granular, biodegradable, containing a minimum of 90 percent sulfur, and with a minimum of 99 percent passing through No. 6 (3.35-mm) sieve and a maximum of 10 percent passing through No. 40 (0.425-mm) sieve.

C. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.

D. Aluminum Sulfate: Commercial grade, unadulterated.

E. Perlite: Horticultural perlite, soil amendment grade.

F. Agricultural Gypsum: Minimum 90 percent calcium sulfate, finely ground with 90 percent passing through No. 50 (0.30-mm) sieve.

G. Sand: Clean, washed, natural or manufactured, and free of toxic materials.

2.04 ORGANIC SOIL AMENDMENTS

A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through **1/2-inch** sieve; soluble salt content of 5 to 10 deciSiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:

1. Organic Matter Content: 50 to 60 percent of dry weight.
2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.

B. Sphagnum Peat: Partially decomposed sphagnum peat moss, finely divided or of granular texture, with a pH range of 3.4 to 4.8.

C. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, and material harmful to plant growth.

2.05 PLANTING ACCESSORIES

A. Selective Herbicides: Environmental Protection Agency registered and approved, of type recommended by manufacturer for application.

2.06 FERTILIZERS

A. Note the phosphorous limitations outlined in Section 1.5, C, 1 (above).

B. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 4 percent nitrogen and 20 percent phosphoric acid.

C. Superphosphate: Commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.

D. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium.

2.07 PLANTING SOILS

A. ASTM D 5268 TOPSOIL: with pH range of 5.5 to 7, a minimum of 6 percent organic material content; free of stones 1 inch or larger in any dimension and other extraneous materials harmful to plant growth. Test soil and mix ASTM D 5268 topsoil with soil amendments in quantities as recommended in test results to produce planting soil.

B. NATIVE SURFACE TOPSOIL: existing, native surface topsoil formed under natural conditions with the duff layer retained during excavation process and stockpiled on-site. Verify suitability of native surface topsoil to produce viable planting soil. Clean soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.

1. Supplement with planting soil when quantities are insufficient.
2. Mix existing, native surface topsoil with soil amendments per test results to produce planting soil:

2.08 MULCHES

A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

B. Compost Mulch: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1-inch sieve; soluble salt content of 2 to 5 deciSiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:

1. Organic Matter Content: 50 to 60 percent of dry weight.
2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.

2.09 PESTICIDES

A. General: Pesticide, registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

B. Pre-Emergent Herbicide (Selective and Non-Selective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.

C. Post-Emergent Herbicide (Selective and Non-Selective): Effective for controlling weed growth that has already germinated.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine areas to be planted for compliance with requirements and other conditions affecting performance.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Owner's Representative and replace with new planting soil.

3.02 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.

1. Protect grade stakes set by others until directed to remove them.

B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.03 LAWN PREPARATION

A. Lawn subgrade preparation shall be limited to areas to be planted and shall be in accordance with construction plans and notes.

3.04 SEEDING

A. Sow seed in accordance with construction plans and notes.

3.05 LAWN RENOVATION

A. Renovate existing lawn.

B. Renovate existing lawn damaged by Contractor's operations, such as storage of materials or equipment and movement of vehicles.

1. Reestablish lawn where settlement or washouts occur or where minor re-grading is required.

C. Remove sod and vegetation from diseased or unsatisfactory lawn areas; do not bury in soil.

D. Remove topsoil containing foreign materials resulting from Contractor's operations, including oil drippings, fuel spills, stone, gravel, and other construction materials, and replace with new topsoil.

E. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of them off Owner's property.

F. Till stripped, bare, and compacted areas thoroughly to a soil depth of 6 inches.

G. Apply soil amendments and initial fertilizers required for establishing new lawns and mix thoroughly into top 4 inches of existing soil. Provide new planting soil to fill low spots and meet finish grades.

H. Apply seed and protect with straw mulch or sod as required for new lawns.

I. Water newly planted areas and keep moist until new lawn is established.

3.06 SATISFACTORY LAWN

A. Satisfactory Seeded Lawn: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.

B. Reestablish lawns that do not comply with requirements and continue maintenance until lawns are satisfactory.

3.07 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.

C. Remove non-degradable erosion-control measures after grass establishment period.

END OF SECTION

DIVISION 33 – UTILITIES

SECTION 332400 – STORM WATER DRAINAGE, STRUCTURES AND CASTINGS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. The work of this section is subject to all applicable provisions of the "General Conditions" and "Supplementary General Conditions", which form a part hereof whether attached hereto or not.

B. Work Included: Furnish labor, materials, equipment, and appurtenances required to perform all work including, but not limited to, the following:

1. Provision and installation of precast catch basins, leaching basins, and other drainage structures where indicated on the drawings.

2. Provision and installation of drainage piping.

1.02 REFERENCE STANDARDS

A. All applicable ASTM Specifications, NYSDOT and AASHTO standards, latest editions, shall apply.

1.03 RELATED SECTIONS

A. Section 310000 – Earthwork
B. Section 310001 – Site Work General Provisions
C. Section 312500 – Sediment and Erosion Control Procedures and Requirements
D. Storm Water Pollution Prevention Plan, if applicable.
E. If this is a LEED project, the work must comply with the requirements of the following related specifications sections:

1. Section 013563 “LEED Requirements” for additional LEED requirements.
2. Section 017419 “Construction Waste Management” for recycling construction waste.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in ample time to facilitate the work as under this section.

B. Store and handle materials in accordance with manufacturer’s recommendations.

1.05 SUBMITTALS FOR REVIEW

A. Submittals shall be in accordance with Section 013300.

B. Product Data: Submit manufacturer's specifications and product data for all materials specified herein. Obtain approval from the Architect before materials are ordered from the manufacturer.

C. Shop Drawings: Submit shop drawings or distributor's information to the Architect for approval of the following:

1. Precast concrete drainage structures.

2. Perforated and non-perforated corrugated polyethylene pipe and fittings.

3. Cast iron frames & grates/covers and combination curb box inlets.

4. Filter fabric.

D. LEED Submittals (if applicable): Submit recycled content and regional materials documentation for each type of product provided under work of this section in accordance with section 013563 – LEED Requirements.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS AND DISTRIBUTORS

A. Precast concrete structures and products shall be as manufactured by AFCO Precast Corp., Coastal Pipeline Corp., Pelkowski Precast, Corp. or approved equal.

B. Corrugated polyethylene pipe (CPP) and fittings shall be "N-12" with smooth interior walls as manufactured by Advanced Drainage Systems, Inc. (ADS), 3300 Riverside Drive, Columbus, Ohio, 43221, (614) 457-3051, or approved equal.

C. Cast iron frames & grates/covers and combination curb box inlets shall be as manufactured by Campbell Foundry Co., Harrison, New Jersey; Neenah Foundry Co., Neenah, Wisconsin; or approved equal.

D. Filter fabric shall be synthetic and rot proof. Unless specifically noted otherwise on the plans, where used primarily for drainage such as wrapping of leaching rings, perforated underdrain piping, French drains, etc., provide:

1. Mirafi Series 140NC as manufactured by TenCate (www.mirafi.com)

2. Series FX-40HS as manufactured by Carthage Mills (www.carthagemills.com)

3. Series US-100NW as manufactured by US Fabrics, Inc. (www.usfabrics.com) or equal.

Fabric shall meet the following minimum requirements:

Property	ASTM Test Method	Value
Grab Tensile Strength	D4632	100 lbs.
Elongation	D4632	50%
Trapezoidal Tear Strength	D4533	45 lbs.
CBR Puncture Strength	D6241	250 lbs.
UV Resistance (at 500 hrs.)	D4355	70%
Apparent Opening Size (AOS)	D4751	70 US Sieve
Permittivity	D4491	2.00 $sec^{(-1)}$
Flow Rate	D4491	140 gpm/sf
Mass (Typical)	D5261	4.0 oz/sy
Thickness (Typical)	D5199	60 mils

E. All structures/products shall meet AASHTO H-20 loading unless otherwise specified on the drawings.

2.02 PRECAST CONCRETE PRODUCTS

A. Strength: 4,000 psi @ 28 days.

B. Cement: ASTM C-150.

C. Aggregates: ASTM C-33.

D. Water: Pure and potable.

E. Reinforcement: ASTM A-615.

F. Welded Wire Fabric: ASTM A-185.

2.03 CORRUGATED POLYETHYLENE PIPING (CPP)

A. Piping products shall meet the requirements of ASTM D-3350 and AASHTO M-252 or M-294, latest edition.

B. Pipe shall be provided with couplings, elbows, and other connections to maintain alignment and insure tight flexible joints. The materials shall be of the same composition as the pipe. Unless otherwise noted, provide soil-tight joints of either bell & spigot configuration or split-couplers.

C. Each length of pipe shall be marked with the manufacturer's trade name, class, type, size, and date of manufacture.

D. Diameter and size of piping shall be as indicated on the drawings.

2.04 CAST IRON FRAMES AND GRATES

A. All cast-iron frames & grates/covers, and combination curb box inlets shall meet the requirements for casting M6A – Steel Castings, Grade N-i; or M8 Iron Castings, Class No. 30; or M 13 – Malleable Iron Castings, Grade 32501 at the Contractor’s option.

B. Grates located in plazas, sidewalks, roadways at drop curbs, or other area of pedestrian activity, shall be ADA compliant.

C. Round manhole frames & covers/grates shall be 22” diameter, unless otherwise noted or shown on the drawings.

D. Rectangular inlet frames & grates shall be 24”x36”, unless otherwise noted or shown on the drawings.

E. Frames, grates, and covers that are warped or rock in the opinion of the Architect will be rejected and removed from the site.

2.05 BRICK CHIMNEY

A. Comply with the ASTM Standard Specifications for Sewer Brick, designated C32-58, for Grade 5A, hard brick, except that the mean of five tests for absorption shall not exceed eight percent weight.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install shoring, sheet piling, or other acceptable excavation stabilization as required by OSHA or other agencies having jurisdiction, or as required by proximity to existing site features.

B. Sides of holes and trenches shall be near vertical as possible. Bracing or sheeting shall not be

removed until the proper level of backfill has been reached.

C. Under no circumstances shall the materials of this section be laid in water.

D. Excavation shall be by open cut from the surface. Leaching holes shall be approximately 3'-0" wider than the outside diameter of section to be installed. Leaching rings and piping shall be set on undisturbed earth. Any and all excess excavation shall be backfilled and thoroughly compacted.

E. After the area to be occupied by each structure has been excavated of all deleterious and impervious materials and acceptable, clean sand and gravel has been encountered, set structures, wrap in filter fabric, and then backfill per item G.

F. All unused pipe knock outs in precast walls must be bricked or concreted to provide full wall thickness.

G. Backfill around drainage inlets and drywells shall be placed on all sides simultaneously and shall be unified soil classification type GW, GP SW or SP. Native soils not meeting this classification shall not be utilized for backfill unless specifically approved by the Architect. Additional backfilling beyond or above the 3'-0" collar shall be done with coarse sand, fine gravel, loam, clean earth, or other excavated materials, free from stones and foreign matter. Backfilling around catch basins and manholes shall be done in accordance with Section 0310000 – Earthwork. Drywell and leaching collar backfill shall be placed in lifts not to exceed 12" in depth. Once backfill has reached the top of the uppermost leachable ring of the structure, the entire leaching collar shall be filled (flooded) with water to settle the leaching collar backfill. A visual inspection shall be done by a certified testing lab with report. Repeat this process until all settlement has occurred and the backfill has reached the top of the uppermost leaching ring. Backfill shall then be placed from the top of the upper leaching ring to subgrade, in compacted lifts not to exceed 12", and should be tested for compaction by a certified test lab with report. Compaction shall be at least 95% in paved areas and 85% in landscape areas, of the modified proctor test, ASTM D 1557.

H. Piping Installation:

1. Installation shall be in accordance with ASTM Recommended Practice D2321, or as shown on the drawings and specified herein. Refer to specification section 310000 – Earthwork for trenching and bedding material specifications.

2. Width of pipe trenches shall be kept to a minimum, while providing adequate space for workmen to place and joint the pipes properly. In no case shall the width of trench be more than 18 inches greater than the diameter of the pipe measured at bell. Trenching practice shall be in accordance with ASTM D2321 and AASHTO Section 30.

3. Install pipe true to designed line and grade, adjusting bedding as required.

4. For bell & spigot joints, install with bells facing upstream. Wood blocking should be utilized to prevent damage during seating of connections.

5. Backfill with approved material from bedding to 12 inches over the pipe in 6 inch layers, thoroughly compacting around the pipe with hand and/or mechanical tamping devices. Backfill evenly on each side of pipe to assure there is no shifting of alignment. From 12 inches over pipe to subgrade, backfill with excavated native material, but allow no trash, debris, or stones to be incorporated in backfill.

6. In all locations where pipes are under paved areas, backfill with approved material from bedding to subgrade in 6-inch layers, thoroughly compacting around the pipe with hand and/or mechanical tamping devices. Backfill evenly on each side of pipe to assure there is no shifting of alignment.

7. Openings in structures cut for piping shall be no larger than 4” greater than outside pipe dimension. Grout full thickness of drainage structure wall at piping.

8. Piping shall protrude from inside face of structure a minimum of 2” and a maximum of 8”.

I. Frames and grates shall be set so that the top of the frame will be flush with finished grade. Frames shall be set in a full bed of stiff mortar with a minimum of three (3) courses of brick and mortar.

J. After backfilling, provide sufficient stakes, flags, etc. to outline the drainage inlets, drywells, and/or piping to prevent disturbance by the use of trucks and heavy equipment.

K. All drainage structures and piping shall be protected and thoroughly cleaned at the completion of the project by the Contractor. Any defacements shall be corrected or replaced as directed by the Architect, without additional cost to the Owner.

L. All existing cast iron covers located within the area of new work shall be adjusted to finished grade.

3.02 SITE RESTORATION AND CLEAN UP

A. The Contractor shall clean up and legally remove from the sites all rubbish and surplus material as it accumulates and shall not permit it to be scattered around the project sites.

1. If this is a LEED project, disposal must comply with Division 01 Section 017419 “Construction Waste Management” for recycling construction waste.

B. The Contractor shall restore all areas of the site affected by the work to its original condition, inclusive of pavements, topsoil and grass, plantings or other ground cover.

END OF SECTION

DIVISION 33 – UTILITIES

SECTION 334000.11 – CLEANING EXISTING STORM WATER DRAINAGE SYSTEMS

PART 1 – GENERAL

1.01 DESCRIPTION

A. Under this work, the Contractor shall clean existing catch basins, manholes, drop inlets, leaching basins, storm drains, and culverts as indicated on the plans and/or as directed by the Engineer.

1.02 CONSTRUCTION DETAILS

A. All drainage system components which lie within the construction area shall be cleaned of silt and debris in a workmanlike manner and maintained clean as determined by the Engineer for the duration of the contract. Material removed from the culverts shall be disposed of off the contract limits. The Contractor shall execute care for and protect all trees, fences, and drainage system components within, or adjacent to, the work site. The Contractor shall replace in kind any system components or other facilities damaged by his operation at his own expense.

END OF SECTION

DIVISION 33 - UTILITIES

SECTION 334100 – STORM UTILITY DRAINAGE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section Includes:
   1. Storm sewer piping, perforated storm sewer piping, yard drains, and appurtenances.

1.03 REFERENCED STANDARDS

A. New York State Department of Transportation (NYSDOT) Standard Specifications dated May 1, 2018, and as amended.

1.04 SUBMITTALS

A. General: Submit the following.
   1. Product data for drainage piping specialties.
   2. Shop drawings for yard drains, adapters, fittings, and other appurtenances.
   3. Stormwater Detention Structures: Include plans, elevations, sections, details, frames, covers, design calculations, and concrete design-mix reports.
   4. Manufacturer's certificates.
   5. As built record drawings at project closeout of installed storm sewerage piping and products.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Do not store plastic pipe, and fittings in direct sunlight.

B. Protect pipe, pipe fittings, and seals from dirt and damage.

1.06 QUALITY ASSURANCE

A. Environmental Compliance: Comply with applicable portions of local health department and environmental agency regulations pertaining to storm sewerage systems.

B. Utility Compliance: Comply with local utility regulations and standards pertaining to storm sewerage.

C. All storm sewer system components shall be installed in accordance with applicable plumbing code requirements and in accordance with all license requirements.

D. All storm sewer construction shall be subject to inspection by the Owner, Owner’s Representative and/or Engineer prior to backfilling.

1.07 PROJECT CONDITIONS

A. Location of Sewers and Sewer Structures: The location, elevation, and grades of sewers and sewer structures are shown on the Drawings and shall be adhered to as closely as possible. If

during construction of the project, it becomes necessary to make changes in the location or grades of the sewers, the Engineer will issue appropriate directions after being contacted by the Contractor.

B. Site Information: Perform site survey, research public utility records, and verify existing utility locations. Verify that storm sewerage system piping may be installed in compliance with original design and referenced standards.

1.08 SEQUENCING AND SCHEDULING

A. Coordinate with other utility work.

PART 2 - PRODUCTS

2.01 PIPE AND FITTINGS

A. General: Provide pipe and pipe fitting materials compatible with each other. Where more than one type of materials or products is indicated, provide as indicated on plans.

B. Polyethylene Storm Sewer Pipe and Fittings:
   1. Plastic storm sewer pipe shall be smooth interior corrugated polyethylene type pipe, Type ADS N-12 as manufactured by Advanced Drainage Systems, Inc. of Columbus, Ohio or approved equivalent. Pipe and fittings shall be made of polyethylene compounds which conform with the physical requirements of Type III, Category 3, 4 or 5, P23, P33 or P34, Class C per ASTM D-1248 with the applicable requirements defined in ASTM D-1248.
   2. Perforated plastic storm sewer pipe shall be perforated smooth interior corrugated polyethylene type pipe, Type ADS N-12 as manufactured by Advanced Drainage Systems, Inc. of Columbus, Ohio or approved equivalent. Pipe and fittings shall be made of polyethylene compounds which conform with the physical requirements of Type III, Category 3, 4 or 5, P23, P33 or P34, Class C per ASTM D-1248 with the applicable requirements defined in ASTM D-1248.
   3. Polyethylene (HDPE) Plastic Pipe and Fittings, ADS N-12 ProLink WT Couplers.

C. Couplings: Rubber or elastomeric sleeve and stainless steel band assembly fabricated to match outside diameters of pipes to be joined or
   1. Sleeves: ASTM F 477, elastomeric seal for plastic pipe. Sleeves for dissimilar or other pipe materials shall be compatible with pipe materials being joined.
   2. Bands: Stainless steel, one at each pipe insert.

2.02 MORTAR

A. General: Mortar shall consist of one part cement and two parts sand by volume. The cement and sand shall be thoroughly mixed dry in clean, tight mortar boxes, and afterward the proper quantity of water shall be added, and mixing completed. Only enough mortar for immediate use shall be mixed. Mortar which has started to set shall not be used, and no retempering of mortar thus set will be allowed.

B. Materials for use in mortar shall conform to the following requirements:
   1. Cement: Cement shall conform to the Standard Specifications for Portland Cement, ASTM Serial Designation C150 with latest amendments.
   2. Sand: Sand shall be sharp, clean, free from deleterious substances and shall be uniformly graded and shall conform to the "Standard Specification for Aggregate for Masonry Mortar", ASTM C144 with the latest amendments.

3. Water: Water used in making mortar or concrete shall be clean and free from oil, alkali, sugar or other deleterious substances. When potable water is in reach, no other water shall be used.

2.03 YARD DRAINs

A. General: Yard drains shall be procured from the same manufacturer as other storm piping elements.

B. Yard drains: small PVC storm drain inlet with a ductile iron grate designed to enter a storm drain line using a tee or elbow and a riser pipe.
   1. Yard drains shall be perforated smooth interior corrugated polyethylene type pipe, Type Nyloplast® Inline Drains as manufactured by Advanced Drainage Systems, Inc. of Columbus, Ohio or approved equivalent.

2.04 INSPECTION OF MATERIALS

A. The manufacturers of materials shall furnish the Engineer a Certificate of Inspection, certified by factory inspector, or reports of tests made by an independent testing laboratory, in three copies, showing that materials furnished conform to applicable specifications set out herein. Each inspection certificate or laboratory report shall identify the materials by number of pieces shipped and date of invoice.

B. A careful field inspection shall be made of all material before installation, and any material found to be damaged in shipment or not meeting the requirements of the Specifications will be rejected and replaced.

PART 3 - EXECUTION

3.01 SURVEY, LINES, AND GRADES

A. The Contractor will be responsible for the proper execution of the work to the lines and grades established. The Contractor is to retain the services of a New York State Licensed Land Surveyor to provide stakeout of lines and grades per the Engineer's Design.

B. The Contractor shall take every precaution to protect all stakes and should replacement become necessary, it shall be done at the Contractor's expense. The Contractor shall also furnish for himself such lines and grades that he may need for construction purposes, including bluetop grade stakes.

C. Setting of grade by use of a laser instrument or device is required. Laser instruments shall be used in accordance with manufacturer's recommendations.

D. The Contractor will maintain an adequate power supply and provide continuous power ventilation in the pipe line in accordance with the laser equipment manufacturer's recommendations as directed whenever the laser equipment is in use.

E. The adjustment of the laser equipment for accuracy shall be made by qualified personnel using surveying instruments at the start of each day's pipe laying and at any time during the day deemed necessary by the Engineer to assure accuracy of the laser equipment.

F. It is the Contractor's sole responsibility for the accuracy of the laser equipment, and any section of pipe found to be at the wrong grade or to have settled shall be dug up and re-laid to the satisfaction of the Engineer at the Contractor's sole expense.

G. As-built elevations shall be established by the Contractor at each fitting and furnished to the Engineer.

3.02 PREPARATION OF FOUNDATION FOR BURIED STORM SEWERAGE SYSTEMS

A. Grade trench bottom to provide a smooth, firm, stable, and rock-free foundation, throughout the length of the pipe.

B. Remove unstable, soft, and unsuitable materials at the surface upon which pipes are to be laid and backfill with pipe zone bedding and backfill material as indicated on the Contract Drawings.

C. Remove rock to a minimum depth of eight inches, or as deemed necessary by Engineer, at the surface upon which pipes are to be laid and backfill with pipe zone bedding and backfill material as indicated on the Contract Drawings.

D. Shape bottom of trench to fit bottom of pipe. Fill unevenness with tamped pipe zone bedding and backfill material. Dig bell holes at each pipe joint to relieve the bells of all loads and to ensure continuous bearing of the pipe barrel on the foundation.

3.03 INSTALLATION, GENERAL

A. General Locations and Arrangements: Drawings (plans and details) indicate the general location and arrangement of the underground storm sewerage system piping. Location and arrangements of piping layout take into account many design considerations. Install the piping as indicated, to the extent practical. If, during construction of the project, it becomes necessary to make changes in the location or grades of the sewers, the Engineer will issue appropriate directions after being contacted by the Contractor.

B. Install piping beginning at low point of systems, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings in accordance with manufacturer's recommendations for use of lubricants, cements, and other installation requirements. Maintain swab or drag in line and pull past each joint as it is completed.

C. Use manholes or catch basins for changes in direction, except where a fitting is indicated. Use fittings for branch connections, except where direct tap into existing sewer is indicated.

D. Use proper size increasers, reducers, and couplings, where different size or material of pipes and fittings are connected. Reduction of the size of piping in the direction of flow is prohibited.

E. Install piping pitched down in direction of flow, at minimum slope of 0.5 percent, except where indicated otherwise.

3.04 PIPE AND TUBE JOINT CONSTRUCTION AND INSTALLATION

A. Polyethylene (HDPE) Plastic Pipe and Fittings, ADS N-12 ProLink WT Couplers as follows:
   1. Join pipe with O-ring gasketed fittings meeting the requirements of ASTM F477 utilizing N-12 ProLink WT ProLink Couplers that meet ASTM D3212. Install according to ASTM D 2321.

3.05 PRECAST CONCRETE STRUCTURES

A. Structures shall be of the dimensions shown on the Drawings, as specified, or as required to meet field conditions.

B. Steps shall be as specified and as shown on the Drawings.

C. Cast iron frames, grates and covers shall be set to the proper elevation in a full bed of mortar. The frame shall be completely mortared onto the manhole as shown on the Drawings.

D. Each structure shall be constructed as soon as practicable after its location in installing the sewers has been reached, and after the Engineer has approved the excavation and bedding.

E. During these operations, the flow of storm water runoff shall be maintained.

3.06 FIELD QUALITY CONTROL

A. Cleaning: Clear interior of piping and structures of dirt and other superfluous material as work progresses. Maintain swab or drag in piping and pull past each joint as it is completed.
   1. In large, accessible piping, brushes and brooms may be used for cleaning.
   2. Place plugs in ends of uncompleted pipe at end of day or whenever work stops.
   3. Flush piping between manholes, if required by local authority, to remove collected debris.

B. Interior Inspection: Inspect piping to determine whether line displacement or other damage has occurred.
   1. Make inspections of pipe between manholes/fittings, after pipe has been installed and approximately 2 feet of backfill is in place, and again at completion of project.
   2. If inspection indicates poor alignment, debris, displaced pipe, infiltration, or other defects, correct such defects and re-inspect.

C. Water Tightness of Sewer Structures: It is the intent of the Drawings and these Specifications that the completed storm sewer lines shall be as soil-tight and free from infiltration as practical. All visible leaks or points of infiltration shall be repaired.

3.07 OUTFALLS

A. Protection of the outlet of the storm sewer shall be in accordance with the Contract Drawings.

END OF SECTION

PLEASE NOTE: SECTIONS THAT HIGHLIGHTED MUST BE FILLED OUT TO COMPLETE THIS CONTRACT. THIS INCLUDES CONTENT IN PAGE 1, SECTIONS 4.20, 5.06, THE SIGNATURE PAGE & SCHEDULE A. DELETE THIS TEXT BEFORE FINALIZING THIS 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 _____ located at _____ 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

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in strict accordance with the Contract Documents; and

(b) complete all work necessary for substantial completion by **within 270 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.

(e) The University shall pay and the Contractor shall accept as full and complete payment for the performance of this Agreement, subject to additions or deductions as provided herein, the total contract compensation of $_____, (in figures), _____ (in words).

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 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 of New York
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 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 Contractors 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.

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:

SUNY Purchase College
Name: Elizabeth Pleva
Title: Director of Procurement & Accounts Payable
Address: 735 Anderson Hill Road, Purchase, NY 10577-1402
Telephone Number: 914-251-6070
E-mail address: Elizabeth.pleva@purchase.edu

{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.

(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.

(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 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 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 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 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 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 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 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.

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 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 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;

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 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.

(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

(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.

(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 uncontemplated 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

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 identified on page one of this agreement 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 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 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 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 Contractors 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 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.

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

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 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 listed on page one of this agreement 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.

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 shall be instituted in the Court of Claims in the State of New York.

b. The Contractor or the person claiming under or through it shall have strictly complied with all requirements relating to the giving of notices and information with respect to such claims; and 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. The Parties shall use good faith efforts to amicably resolve any dispute arising under this Agreement. If the Parties are unable to amicably resolve the dispute within thirty (30) days, then either Party may seek legal or equitable redress.

(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.

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 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 Contactor'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 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 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.

(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.

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.

Section 7.03 Governing Law
This Agreement shall be governed, construed and enforced in accordance with the laws of New York State, excluding New York State's choice of law principles, in a court of competent jurisdiction, and all claims relating to or arising out of this Agreement or the breach thereof, whether sounding in contract, tort or otherwise, shall likewise be governed by the laws of New York State, excluding the New York choice of law principles, in a court of competent jurisdiction. Consultant agrees to submit itself to such courts' jurisdiction.

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.

In accordance with the Chapter 17 of the Laws of 2023 certain University contracts are subject to review by the Office of the State Comptroller. As such a 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 Office of the State Comptroller and filed in their office.

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: *D990227*

Insert Contractor Name

Sign:_____ Date:_____

Print: _____

Title:_____

STATE UNIVERSITY OF NEW YORK

Sign:_____ Date:_____

Print: _____

Title:_____

APPROVED BY ATTORNEY GENERAL:

_____ Date:_____

By:

APPROVED BY OFFICE OF THE STATE COMPTROLLER:

_____ Date:_____

By:

ACKNOWLEDGMENTS

(ACKNOWLEDGMENT BY AN INDIVIDUAL)

STATE OF NEW YORK)
) ss.
COUNTY OF)

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

_____Notary Public

(ACKNOWLEDGMENT BY A PARTNERSHIP)

STATE OF NEW YORK)
) ss.
COUNTY OF)

On this _____ day of _____, 20_____, before me personally came_____

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

_____Notary Public

(ACKNOWLEDGMENT BY A CORPORATION)

STATE OF)
) ss.
COUNTY OF)

On this _____ day of_____, 20_____, before me personally came_____ , to me known, who, being duly sworn, did depose and say that he/she reside in _____; that he/she is the _____of the _____, the corporation described in and which executed the above instrument; and that he/she/they signed his/her/their name(s) thereto by authority of the board of directors of said corporation.

_____
Notary Public

Schedule I, II, III

SCHEDULE I
Unit Prices

Refer to Section 4.04 of the Agreement for additional information.

Work or Material Description	Amount in Words	Amount in Figures
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.

Work or Material Description	Amount in Words	Amount in Figures
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

Seventy-five thousand dollars	$75,000
(in words)	(in figures

Exhibit A

Exhibit A-1

Standard Contract Clauses

EXHIBIT A

State University of New York **June 21, 2023**

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.** (a) In accordance with Section 112 of the State Finance Law, the State Comptroller's approval is required for the following contracts: (i) goods, services, construction, and construction-related services for State University hospital or healthcare facilities which exceed $150,000; (ii) purchases utilizing an Office of General Services (OGS) centralized contract which exceed $200,000 (iii) goods, services, construction, and construction-related services not described in (i) or (ii) and which exceed $75,000;

(b) If this contract exceeds the threshold amounts listed above in Paragraph 3(a), or, if this is an amendment for any amount to a contract which, as so amended, exceeds said threshold amounts, 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.

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, citizenship or immigration status, 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 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 165of 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 and Technology Development
625 Broadway
Albany, NY 12245
Telephone: 518-292-5100

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 33rd Floor
New York, NY 10017
646-846-7364
email: mwbebusinessdev@esd.ny.gov
https://ny.newnycontracts.com/FrontEnd/searchcertifieddirectory.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 May 2023, 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, § 899-bb, and State Technology Law § 208).

23. **COMPLIANCE WITH CONSULTANT DISCLOSURE LAW.** If this is a contract for consulting services, defined for purposes of this requirement to include analysis, evaluation, research, training, data processing, computer programming, engineering, environmental health and mental health services, accounting, auditing, paralegal, legal or similar services, then in accordance with Section 163(4)(g) of the State Finance Law (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 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/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.

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.

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 ENTER- PRISE 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, Domini- can, 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 Con- tractor 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 (10.28%) for Certified Minority-Owned Business Enterprises and (15.00%) 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.