

**PROJECT MANUAL  
FOR  
Student Union Senior  
Square**

**UNIVERSITY OF CONNECTICUT  
STORRS CAMPUS  
Storrs, Connecticut**

**PROJECT #201642**

**UConn**  
**UNIVERSITY OF CONNECTICUT**

**May 13, 2015**

**ARCHITECT/ENGINEER OF RECORD:**

**University of Connecticut Planning, Architectural &  
Engineering Services**

**Table of Contents**

<b><u>Documents:</u></b>	<b><u>Number of Pages</u></b>
Table of Contents	1
Invitation to Bid	2
Instruction to Bidders	20
Form of Proposal/Bid Submission	28
AIA 101 - Standard Form of Agreement – Draft	7
AIA 201 - General Conditions	69
Project Manual	254
Drawings	4

# **INVITATION TO BID**

May 13, 2015

**DUE DATE:** May 26, 2015

**TIME:** 2:00 p.m.

**LOCATION:** University of Connecticut  
Capital Projects & Contract Administration  
3 North Hillside Road, Unit 6047  
Storrs, CT  
Attn: Walt Dalia

**The University of Connecticut is accepting sealed bids (Faxed Bids will not be accepted) for:**

**Student Union Senior Square**

**Project #201462**

**UNIVERSITY OF CONNECTICUT**

**Storrs, CT**

Bids must be submitted on the forms supplied and in the manner specified within the Bid Documents. The invitation is open to previously prequalified On Call Trade Site Work and Landscape Contractors only.

## **Project Description**

The purpose of this project is to improve the appearance of the central entrance at the Student Union building. This work will be performed on the Storrs Campus of the University of Connecticut, Storrs, Connecticut.

## **Scope of Work**

The following generally describes the proposed scope of work. Refer to the complete set of Specifications for more complete information:

- Removal of plantings
- Unit pavers with sand setting bed over concrete base
- Sodded lawn
- Plantings
- Concrete work
- Campus standard benches
- Removal of all debris caused by this Contract

## **PRE-BID CONFERENCE**

There will be a job-site walkthrough on **Monday, May 18, 2015 at 3:00 p.m.** This walkthrough is ***not mandatory*** however; interested bidders are ***strongly encouraged*** to attend to view existing conditions. Meet at the **Purchasing Bid Room, 2<sup>nd</sup> floor located at 3 North Hillside Road, Storrs, Connecticut.** The Pre-Bid Conference will commence promptly at the time noted herein. There are limited short-term visitor parking spaces around the Purchasing Building. The North Parking Garage is recommended to all vendors as parking on campus is at your own risk.

**REQUEST FOR INFORMATION PROCEDURE**

**No questions will be accepted after 2:00 p.m. on Tuesday, May 19, 2015.** All answers will be published by written Bid Clarification. Extensions of RFI deadlines may only be revised via written Bid Clarification. It is the responsibility of all bidders to verify that they are current with all Bid Clarifications issued with the Office of Capital Projects and Contract Administration prior to bid submission.

**Bids will be accepted at the Office of Capital Project and Contract Administration, 3 North Hillside Road, Storrs, CT 06269 until 2:00 P.M. local time on Tuesday, May 26, 2015 at which time they will be publicly opened and read.**

In the bidding of most deferred maintenance, major renovation, and new construction projects, general contractors are advised they must award twenty-five percent (25%) or more of the values of their awarded contracts to certified SBE's; and, of that amount, twenty-five percent (i.e., 6.25%) or more must be awarded to SBE's who are also MBE's. The general contractors are responsible for ensuring that they and the SBE's they have selected are eligible contractors, and that they meet State requirements

The University reserves the right to reject any or all Bids, in whole or in part, to award any item, group of items, or total Bid, and to waive any informality or technical defects, if it is deemed to be in the best interests of the University.

No Bidder may withdraw its Bid within **ninety (90) days** of the date of the Bid opening. Should there be reasons why the Contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the University and the Bidder.

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Walt Dalia  
Purchasing Agent II  
Capital Projects and Contract Administration

**INSTRUCTIONS TO PREQUALIFIED BIDDERS**

**ARTICLE 1 GENERAL PROVISIONS**

**1.1 Connecticut Sales and Use Tax**

1.1.1 The University of Connecticut is a tax-exempt institution. The Contractor shall be familiar with the current regulations of the Department of Revenue Service. The tax on materials or supplies exempted by such regulations shall not be included as part of the Bid. A Sales Tax Certificate is available from the Purchasing Department upon written request.

**1.2 Contractor's Qualifications**

In the Pre-Qualification to Bid Documents for this project, the University has reserved the right to request additional information from prospective Bidders beyond what may have been submitted in any Application and Statement of Qualifications in response to the Invitation to Pre-Qualify. The University has also reserved the right to find any Bidder to be non-responsible with respect to a specific project notwithstanding the fact that the Bidder may have previously been pre-qualified pursuant to the pre-qualification process. The University reaffirms these reservations of rights. In finding that a Bidder is non-responsible, the University may rely upon any information obtained prior to or subsequent to a finding that Bidder is pre-qualified.

1.2.1 CGS 4b-91 Requires each bid submitted shall include a copy of a prequalification certificate issued by the Commissioner of Administrative Services. The bid shall also be accompanied by an update bid statement in such form as the Commissioner of Administrative Services prescribes. The form for such update bid statement shall provide space for information regarding all projects completed by the bidder since the date the bidder's prequalification certificate was issued or renewed, all projects the bidder currently has under contract, including the percentage of work on such projects not completed, the names and qualifications of the personnel who will have supervisory responsibility for the performance of the contract, any significant changes in the bidder's financial position or corporate structure since the date the certificate was issued or renewed, any change in the contractor's qualification status as determined by the provisions of subdivision (6) of subsection (c) of section 4a-100 and such other relevant information as the Commissioner of Administrative Services prescribes. Any bid submitted without a copy of the prequalification certificate and an update bid statement shall be invalid and considered non-responsible.

**1.3 Academic Schedule**

1.3.1 It is important to the University, in order to maintain the integrity of its ongoing academic activities, that its rules and regulations and the requirements of the Contract Documents, regarding noise control, traffic control etc. and other matters which may affect its operations be strictly adhered to, and that its academic schedule be maintained. Therefore, all Bidders shall familiarize themselves with and comply with the academic schedule of the University, and its regulations regarding noise, traffic, etc. which are available from Architectural and Engineering Services. No noise generating work shall be allowed during exam periods where the noise will impact classroom functions. Examples of noise generating work include, but are not limited to, sawing, drilling, and hammering/jackhammering. The Contractor shall keep the

University Representative informed as to the location of its operations to enable necessary precautions or co-ordination to be implemented.

1.4 Non-Discrimination and Affirmative Action Provisions

1.4.1 Non-discrimination. References in this section to "Contract" shall mean the execution of AIA 101 or Purchase Order Contract; and references to "Contractor" shall mean the person or entity who will be solely responsible for execution of the work.

(a) The following subsections are set forth here as required by section 4a-60 of the Connecticut General Statutes:

(1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the state of Connecticut. The Contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved; (2) the Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the commission; (3) the Contractor agrees to provide each labor union or representative of workers with which such Contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such Contractor has a contract or understanding, a notice to be provided by the commission advising the labor union or workers' representative of the Contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment; (4) the Contractor agrees to comply with each provision of this section and sections 46a-68e and 46a-68f and with each regulation or relevant order issued by said commission pursuant to sections 46a-56, 46a-68e and 46a-68f; (5) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor as relate to the provisions of this section and section 46a-56.

(b) If the Contract is a public works contract, the Contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works project.

(c) "Minority business enterprise" means any small contractor or supplier of materials fifty-one per cent or more of the capital stock, if any, or assets of which is owned by a person or persons: (1) Who are active in the daily affairs of the enterprise, (2) who have the power to direct the management and policies of the enterprise and (3) who are members of a minority, as such term is defined in subsection (a) of section 32-9n; and "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations. "Good faith efforts" shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements.

- (d) Determination of the Contractor's good faith efforts shall include but shall not be limited to the following factors: The Contractor's employment and subcontracting policies, patterns and practices; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or efforts as the commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.
- (e) The Contractor shall develop and maintain adequate documentation, in a manner prescribed by the commission, of its good faith efforts.
- (f) The Contractor shall include the provisions of sections (a) and (b) above in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with section 46a-56; provided, if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the commission, the Contractor may request the state of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the state and the state may so enter.
- (g) The following subsections are set forth here as required by section 4a-60a of the Connecticut General Statutes:
  - (1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or of the state of Connecticut, and that employees are treated when employed without regard to their sexual orientation; (2) the Contractor agrees to provide each labor union or representative of workers with which such Contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such Contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the Contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment; (3) the Contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said commission pursuant to section 46a-56; and (4) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor which relate to the provisions of this section and section 46a-56.
- (h) The Contractor shall include the provisions of section (g) above in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with section 46a-56; provided, if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the commission, the Contractor may request the state of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the state and the state may so enter.

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- (i) For the purposes of this entire Non-Discrimination section, "Contract" or "contract" includes any extension or modification of the Contract or contract, "Contractor" or "contractor" includes any successors or assigns of the Contractor or contractor, "marital status" means being single, married as recognized by the state of Connecticut, widowed, separated or divorced, and "mental disability" means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders", or a record of or regarding a person as having one or more such disorders. For the purposes of this section, "Contract" does not include a contract where each contractor is (1) a political subdivision of the state, including, but not limited to, a municipality, (2) a quasi-public agency, as defined in Conn. Gen. Stat. Section 1-120, (3) any other state, including but not limited to any federally recognized Indian tribal governments, as defined in Conn. Gen. Stat. Section 1-267, (4) the federal government, (5) a foreign government, or (6) an agency of a subdivision, agency, state or government described in the immediately preceding enumerated items (1), (2), (3), (4) or (5).

1.5 Union Labor

- 1.5.1 Attention is called to the fact that there may be construction work now being carried on at the site at which this construction is contemplated being done by UNION LABOR. This fact must be kept in mind by all Bidders submitting proposals for this work.

1.6 Labor Market Area

- 1.6.1 All Bidders shall have read Sections 31-52 and 31-52a of the Connecticut General Statutes, as amended. These references relate to the preference of State citizens, the preference of residents of the labor market area in which the work under the Contract is to be done and the penalties for violations.

1.7 Wage Rates

- 1.7.1 If this project involves new construction of a building or other structure or improvement, and the total cost of all Work to be performed by Contractors and Subcontractors is \$400,000.00 or more, or if the project involves remodeling, refurbishing, rehabilitation, alteration or repair of a building or other structure or improvement, and such total cost is \$100,000.00 or more, then:

- .1 The wages paid on an hourly basis to any mechanic, laborer or workman employed upon the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such employee to any employee welfare fund as defined in Subsection (h) of Section 31-53 of the Connecticut General Statutes, shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the town in which such project is being constructed. Any Contractor who is not obligated by agreement to make payment or contribution on behalf of such employees to any such employee welfare fund shall pay to each employee as part of his wages the amount of payment or contribution for his classification on each payday.

- 1.7.2 The State of Connecticut Labor Department Wage Rate Schedule, when required by the University, shall be provided with these documents or will be issued as part of the bid documents or by Bid Clarification/Addendum hereto and is deemed to reflect such customary



or prevailing wages for this project, and is hereby incorporated and made a part of the Contract Documents.

- 1.7.3 Each contractor who is awarded a contract on or after October 1, 2002 shall be subject to provisions of the Connecticut General Statutes, Section 31-53 as amended by Public Act 02-69, "An Act Concerning Annual Adjustments to Prevailing Wages".
- 1.7.4 Wage Rates will be posted each July 1<sup>st</sup> on the Department of Labor Website: [www.ctdol.state.ct.us](http://www.ctdol.state.ct.us). Such prevailing wage adjustment will not be considered a matter for an annual contract amendment.
- 1.7.5 Wage rates shall be paid pursuant to Section 31-53 and 31-54 of the Connecticut General Statutes, and any regulations issued hereunder.
- 1.7.6 **Sec. 31-53b. Construction safety and health course. New miner training program. Proof of completion required for mechanics, laborers and workers on public works projects. Enforcement. Regulations. Exceptions.** (a) Each contract for a public works project entered into on or after July 1, 2009, by the state or any of its agents, or by any political subdivision of the state or any of its agents, described in subsection (g) of section 31-53, shall contain a provision requiring that each contractor furnish proof with the weekly certified payroll form for the first week each employee begins work on such project that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53 on such public works project, pursuant to such contract, has completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, has completed a new miner training program approved by the Federal Mine Safety and Health Administration in accordance with 30 CFR 48 or, in the case of telecommunications employees, has completed at least ten hours of training in accordance with 29 CFR 1910.268. (b) Any person required to complete a course or program under subsection (a) of this section who has not completed the course or program shall be subject to removal from the worksite if the person does not provide documentation of having completed such course or program by the fifteenth day after the date the person is found to be in noncompliance.

## ARTICLE 2 BIDDERS' REPRESENTATIONS

- 2.1 The amount of each Bid shall be deemed to include the entire cost and expense of every item of labor, material and overhead necessary to complete the work bid upon, as specified, in full detail ready for use. The risk of all such costs and expenses shall be deemed assumed by the successful Bidder. The University shall assign a University Representative to work with the successful Contractor as a liaison.
- 2.2 In performing its obligations under this Contract, the Contractor agrees to comply with all applicable states, laws, ordinances, regulations, codes, rules or orders of, or issued by, any governmental body having jurisdiction over the work, location of the work or contract.

## ARTICLE 3 BIDDING DOCUMENTS

### 3.1 Bid Clarifications, Addenda and Interpretations

- 3.1.1 No interpretations of the meaning of the Drawings, specifications or other Contract Documents will be made orally to any Bidder. Every request for such interpretation must be

made in writing to the University Office of Capital Project & Contract Administration, and to be given consideration shall be received at the specified date outlined within the invitation to bid and/or adjusted by a bid clarification/addenda.

- 3.1.2 Any and all such interpretations and any supplemental instructions will be in the form of written bid clarification/addenda which, if issued, will be posted on the University's Capital Projects and Contract Administration's Department website; [www.cPCA.uconn.edu](http://www.cPCA.uconn.edu). for all prospective Bidders to access or for those without access to a computer you can obtain them through Joseph Merritt, no later than five (5) days prior to the date fixed for the opening of Bids. Failure of any Bidder to receive any such addendum or interpretation shall not release any Bidder from any obligations under his Bid as submitted, provided notice has been sent to the address furnished by such prospective Bidder for the transmittal of notices, addenda and interpretations. It shall be the Bidder's responsibility to make inquiry as to, and to obtain, the Addenda issued, if any.
- 3.1.3 The number of days shown in 3.1.1 and 3.1.2 may differ from the actual dates given in an Agenda for a Pre-Bid or Pre-Proposal Conference, if so, the number of days listed are, hereby, superseded by the Agenda dates, unless the Bid or Proposal is extended by Addendum, in which case the number of days will again apply unless stated differently in the Addendum.
- 3.1.4 Bidders shall promptly notify the University of any ambiguity, inconsistency or error which they may discover upon examination of these Contract Documents.

#### **ARTICLE 4 BIDDING PROCEDURES**

##### **4.1 Requests for Information**

- 4.1.1 Enclosed with this Invitation to Submit Proposals Manual is a Request for Information Form (RFI). All questions/clarifications must be submitted in writing on this form and before the prescribed RFI Deadline. No verbal questions will be answered. All answers to RFI's will be issued in a Bid Clarification/Addenda. Form is at the end of this document.

##### **4.2 Form of Proposal**

- 4.2.1 Enclosed with this Invitation to Submit Proposals Manual is a Form of Proposal. Bids shall be submitted on a copy of this form. Additional instructions to bidders including information on submission of bids and award and Contract appear on this form. All documents required by these Bid Documents must be returned with your Bid.

##### **4.3 Bids and Rejection of Bids**

- 4.3.1 General Bids shall be for the complete work as specified and shall include the names of any Subcontractors for the classes of work specified in the Form of Proposal, and for each other class of work for which the University has required a separate section and the dollar amounts of their subcontracts, and the General Contractor shall be selected on the basis of such general Bids. It shall be presumed that the general Bidder intends to perform with its own employees all work in such four classes and such other classes, for which no Subcontractor is named. The general Bidder's qualifications for performing such work shall be subject to review by the University pursuant to the Bid and the Contract Documents.

- 4.3.2 Bids shall be submitted only on the forms furnished for the specific project, which shall include a completed Form of Proposal containing all information required on the Proposal form, executed with an original signature by a duly authorized officer or representative of the Bidder, and, in the case of a Joint Venture, by duly authorized representatives of each Joint Venture. In no event will Bids or changes in Bids made by telephone, email or fax be considered. Any Form of Proposal omitting or adding items, altering the form, containing conditional or alternative Bids, or without the original signature of the Bidder or its authorized representative, may be rejected.
- 4.3.3 Any Bids received after the scheduled closing time for the receipt of Bids will be returned to the Bidders unopened.
- 4.3.4 Any Bid once deposited with the University of Connecticut may only be withdrawn by letter of request, signed by the depositing Bidder and presented to the Office of Capital Project and Contract Administration, prior to the time of opening of any Bid for the project designated or identified project.
- 4.4 Bid Security
- 4.4.1 Each Bid must be accompanied by a certified check payable to the order of the University of Connecticut, or the Bid may be accompanied by a Bid Bond in the form required by the University, having as surety thereto such surety company or companies acceptable to the University and as are authorized to do business in this State, for an amount not less than 10 per cent of the Bid. All checks submitted by unsuccessful Bidders shall be returned to them after the Contract has been awarded. Bid Security is not required for projects under \$50,000.00.
- 4.4.2 Failure of the successful Bidder to file the required Performance and Labor & Material bonds shall be just cause for the amount of the security deposited with the Bid to be forfeited, any part of the whole of which may be used to make up the difference between the Bid of the defaulting Bidder and the Bid of the next lowest responsible qualified Bidder to whom the work is finally awarded. Failure to execute a contract after award as specified and Bid shall also result in the forfeiture of such Bid Bonds or Certified Check.
- 4.5 Subcontractors
- 4.5.1 The Contractor shall not contract with a person or entity who appears on the State of Connecticut Debarment List, the Federal Davis Bacon Act Debarment List, both of which are available through: <http://ctdol.state.ct.us> or the Federal List of Excluded Parties Listing System available through: <http://epls.arnet.gov>
- 4.5.2 The Bidder shall furnish, with his submitted Bid, as is set forth in the Proposal Form, in the space provided for such purpose, the names and prices of responsible and qualified Subcontractors who are actually to perform the following categories of work under the Base Bid, if their prices exceed \$25,000.00:
- .1 Masonry

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- .2 Electrical
  - .3 Mechanical other than HVAC
  - .4 HVAC
  - .5 Any other class of work identified in the Proposal Form for which a blank space has been provided.
- 4.5.3 The Bidder further agrees that each of the Subcontractors listed on the Proposal Form will be used for the work indicated at the amount stated unless a substitution is permitted by the University.
- 4.5.4 The Bidder further agrees and warrants that he has made good faith efforts to employ minority business enterprises as Subcontractors and suppliers of materials under such contract and shall provide the Commission on Human Rights and Opportunities with such information as is requested by the Commission concerning his employment practices and procedures as they relate to the provisions of the general statutes governing contract requirements.
- 4.5.5 Pursuant to Connecticut General Statutes Section 49-41a, for every contract with the University for the construction, alteration or repair of any building or work, (1) the Contractor, within 30 days after payment to the Contractor by the University, shall be required to pay any amounts due any Subcontractor, whether for labor performed or materials furnished, when the labor or materials have been included in a requisition submitted by the Contractor and paid by the University; (2) the Contractor shall include in each of its subcontracts a provision requiring each Subcontractor to pay any amounts due any of its Subcontractors, whether for labor performed or materials furnished, within 30 days after each Subcontractor receives a payment from the Contractor which encompasses labor or materials furnished by such Subcontractor.
- 4.5.6 Within five days after being notified of the award of a general Contract by the University, or, in the case of an approval of a substitute Subcontractor by the University, within five days after being notified of such approval, the general Bidder shall present to each listed or substitute Subcontractor:
- .1 A subcontract in the form set forth in Section 4b-96 of the Connecticut General Statutes and must be executed with all of your named subcontractors in your form of proposal.
  - .2 A notice of the time limit under this section for executing a subcontract. If a listed Subcontractor fails within five days, Saturdays, Sundays and legal holidays excluded, after presentation of a subcontract by the general Bidder selected as a General Contractor, to perform his agreement to execute a subcontract in the form hereinafter set forth with such general Bidder, contingent upon the execution of the general Contract, the General Contractor shall select another Subcontractor, with the approval of the University. When seeking approval for a substitute Subcontractor, the general Bidder shall provide the University with all documents showing (a) the general Bidder's proper presentation of a subcontract to the listed Subcontractor and, (b) communications to or from such Subcontractor after such presentation. The University shall adjust the Contract Price to reflect the difference between the amount of the price of the new Subcontractor and the amount of the price of the listed Subcontractor, if the

new Subcontractor's price is lower and may adjust such Contract Price, if the new Subcontractor's price is higher. The general Bidder shall, with respect to each listed Subcontractor or approved substitute Subcontractor, file with the University a copy of each executed subcontract within ten days, Saturdays, Sundays and legal holidays excluded, of presentation of a subcontract to such Subcontractor.

- .3 In the event of any conflict or inconsistency between the University of Connecticut's Subcontract form and the Contractor's standard Subcontract form, the provisions of the University of Connecticut's Subcontract form shall prevail. Any standard Subcontract form used will be attached as a supplement to the University of Connecticut's Subcontract form.

#### **4.6 LIQUIDATED DAMAGES**

- 4.6.1 Liquidated Damages of Five Hundred and 00/100 Dollars (\$500.00) per calendar day shall be assessed if the Contractor fails to achieve Substantial Completion, or causes delay to the Substantial Completion of any portion of the Work within the Contract Time.

#### **4.7 COMMISSION ON HUMAN RIGHTS AND OPPORTUNITIES CONTRACT COMPLIANCE REGULATIONS:**

The contract to be awarded is subject to contract compliance requirements mandated by Sections 4a-60 and 4a-60a of the Connecticut General Statutes; and, when the awarding agency is the State, Sections 46a-71(d) and -81i(d) of the Connecticut General Statutes. There are Contract Compliance Regulations codified at Section-68j-21 through 43 of the Regulations of Connecticut State Agencies, which establish a procedure for awarding all contracts covered by Sections 4a-60 and 46a-71(d) of the Connecticut General Statutes. According to Section 46a-68j-30(9) of the Contract Compliance Regulations, every agency awarding a contract subject to the contract compliance requirements has an obligation to "aggressively solicit the participation of legitimate minority business enterprises as bidders, contractors, subcontractors and suppliers of materials." Minority business enterprise" is defined in Section 4a-60 of the Connecticut General Statutes as a business wherein fifty-one percent or more of the capital stock, or assets belong to a person or persons: "(1) Who are active in daily affairs of the enterprise; (2) who have the power to direct the management and policies of the enterprise; and (3) who are members of a minority, as such term is defined in subsection (a) of Section 32-9n." "Minority" groups are defined in Section 32-9n of the Connecticut General Statutes as "(1) Black Americans . . . (2) Hispanic Americans . . . (3) persons who have origins in the Iberian Peninsula . . . (4) Women . . . (5) Asian Pacific Americans and Pacific Islanders; (6) American Indians . . ." An individual with a disability is also a minority business enterprise as provided by Section 4a-60g of the Connecticut General Statutes. The above definitions apply to the contract compliance requirements by virtue of Section 46a-68j-21(11) of the Contract Compliance Regulations. The awarding agency will consider the following factors when reviewing the bidder's qualifications under the contract compliance requirements: (a) the bidder's success in implementing an affirmative action plan; (b) the bidder's success in developing an apprenticeship program complying with Sections 46a-68-1 to 46a-68-17 of the Administrative Regulations of Connecticut State Agencies, inclusive; (c) the bidder's promise to develop and implement a successful affirmative action plan; (d) the bidder's submission of employment statistics contained in the "Employment Information Form", indicating that the composition of its workforce is at or near parity when compared to the racial and sexual composition

of the workforce in the relevant labor market area; and(e) the bidder's promise to set aside a portion of the contract for legitimate minority business enterprises. See Section 46a-68j-30(10)(E) of the Contract Compliance Regulations.

4.7.1 The following BIDDER CONTRACT COMPLIANCE MONITORING REPORT must be completed in full, signed, and submitted with the bid for this contract. The contract awarding agency and the Commission on Human Rights and Opportunities will use the information contained thereon to determine the bidders compliance to Sections 4a-60 and 4a-60a CONN. GEN. STAT., and Sections 46a-68j-23 of the Regulations of Connecticut State Agencies regarding equal employment opportunity, and the bidders \_\_good faith efforts to include minority business enterprises as subcontractors and suppliers for the work of the contract.

1) Definition of Small Contractor:

Section 4a-60g CONN. GEN. STAT. defines a small contractor as a company that has been doing business under the same management and control and has maintained its principal place of business in Connecticut for a one year period immediately prior to its application for certification under this section, had gross revenues not exceeding ten million dollars in the most recently completed fiscal year, and at least fifty-one percent of the ownership of which is held by a person or persons who are active in the daily affairs of the company, and have the power to direct the management and policies of the company, except that a nonprofit corporation shall be construed to be a small contractor if such nonprofit corporation meets the requirements of subparagraphs (A) and (B) of subdivision 4a-60g CONN. GEN. STAT.

2) Description of Job Categories (as used in Part IV Bidder Employment Information)

**MANAGEMENT:** Managers plan, organize, direct, and control the major functions of an organization through subordinates who are at the managerial or supervisory level. They make policy decisions and set objectives for the company or departments. They are not usually directly involved in production or providing services. Examples include top executives, public relations managers, managers of operations specialties (such as financial, human resources, or purchasing managers), and construction and engineering managers.

**BUSINESS AND FINANCIAL OPERATIONS:** These occupations include managers and professionals who work with the financial aspects of the business. These occupations include accountants and auditors, purchasing agents, management analysts, labor relations specialists, and budget, credit, and financial analysts.

**COMPUTER SPECIALISTS:** Professionals responsible for the computer operations within a company are grouped in this category. Examples of job titles in this category include computer programmers, software engineers, database administrators, computer scientists, systems analysts, and computer support specialists

**ARCHITECTURE AND ENGINEERING:** Occupations related to architecture, surveying, engineering, and drafting are included in this category. Some of the job titles in this category include electrical and electronic engineers, surveyors, architects, drafters, mechanical engineers, materials engineers, mapping technicians, and civil engineers.

**OFFICE AND ADMINISTRATIVE SUPPORT:** All clerical-type work is included in this category. These jobs involve the preparing, transcribing, and preserving of written communications and records; collecting accounts; gathering and distributing information; operating office machines and electronic data processing equipment; and distributing mail. Job titles listed in this category include telephone operators, payroll clerks, bill and account collectors, customer service representatives, files clerks, dispatchers, shipping clerks, secretaries and

administrative assistants, computer operators, mail clerks, and stock clerks.

**BUILDING AND GROUNDS CLEANING AND MAINTENANCE:**

This category includes occupations involving landscaping, housekeeping, and janitorial services. Job titles found in this category include supervisors of landscaping or housekeeping, janitors, maids, grounds maintenance workers, and pest control workers.

**CONSTRUCTION AND EXTRACTION:** This category includes construction trades and related occupations. Job titles found in this category include boilermakers, masons (all types), carpenters, construction laborers, electricians, plumbers (and related trades), roofers, sheet metal workers, elevator installers, hazardous materials removal workers, paperhangers, and painters. Paving, surfacing, and tamping equipment operators; drywall and ceiling tile installers; and carpet, floor and tile installers and finishers are also included in this category. First line supervisors, foremen, and helpers in these trades are also grouped in this category..

**INSTALLATION, MAINTENANCE AND REPAIR:** Occupations involving the installation, maintenance, and repair of equipment are included in this group. Examples of job titles found here are heating, ac, and refrigeration mechanics and installers; telecommunication line installers and repairers; heavy vehicle and mobile equipment service technicians and mechanics; small engine mechanics; security and fire alarm systems installers; electric/electronic repair, industrial, utility and transportation equipment; millwrights; riggers; and manufactured building and mobile home installers. First line supervisors, foremen, and helpers for these jobs are also included in the category.

**MATERIAL MOVING WORKERS:** The job titles included in this group are Crane and tower operators; dredge, excavating, and lading machine operators; hoist and winch operators; industrial truck and tractor operators; cleaners of vehicles and equipment; laborers and freight, stock, and material movers, hand; machine feeders and offbearers; packers and packagers, hand; pumping station operators; refuse and recyclable material collectors; and miscellaneous material moving workers.

3) Definition of Racial and Ethnic Terms (as used in Part IV Bidder Employment Information):  
White (not of Hispanic Origin)- All persons having origins in any of the original peoples of Europe, North Africa, or the Middle East.

Black (not of Hispanic Origin)- All persons having origins in any of the Black racial groups of Africa.

Hispanic- All persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.

Asian or Pacific Islander- All persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes China, India, Japan, Korea, the Philippine Islands, and Samoa.

American Indian or Alaskan Native- All persons having origins in any of the original peoples of North America, and who maintain cultural identification through tribal affiliation or community recognition

**ARTICLE 5      CONSIDERATION OF BIDS**

- 5.1    Every general bid which is conditional or obscure, or which contains any addition not called for shall be invalid; and the University shall reject every such general Bid. The University shall be authorized to waive minor irregularities, which it considers in its best interest, provided the reasons for any such waiver are stated in writing by the University and made a part of the contract file. No such general Bid shall be rejected because of the failure to submit prices for, or information relating to, any item or items for which no specific space is provided in the general Proposal Form furnished by the University,

**UNIVERSITY OF CONNECTICUT  
STUDENT UNION SENIOR SQUARE  
#201642**

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- but this sentence shall not be applicable to any failure to furnish prices or information required by Articles 4.2.1 and 4.4.1 above to be furnished in the form provided by the University. The University also reserves the right to reject any and all bids and again advertise for bids, or to otherwise proceed as permitted under Connecticut General Statutes 10a-109a through 10a-109y.
- 5.2 General Bids shall be publicly opened and read by the University forthwith. The University may require in the Proposal Form that the General Contractor agree to perform a stated, minimum percentage of work with his own forces. The University may also require the General Contractor to set aside a portion of the contract for Subcontractors who are eligible for set aside contracts. The University shall not permit substitution of a Subcontractor for one named in accordance with the provisions of these Instructions or substitution of a Subcontractor for any designated subtrade work bid to be performed by the General Contractor's own forces, except for good cause. The term "good cause" includes but is not limited to a Subcontractor's or, where appropriate, a General Contractor's: (1) Death or physical disability, if the listed Subcontractor is an individual; (2) dissolution, if a corporation or partnership; (3) bankruptcy; (4) inability to furnish any performance and payment bond shown on the Proposal Form; (5) inability to obtain, or loss of, a license necessary for the performance of a particular category of work; (6) failure or inability to comply with a requirement of law applicable to Contractors, Subcontractors, on construction, alteration, or repair projects; (7) failure to perform his agreement to execute a subcontract under Connecticut General Statutes Section 4b-96.
- 5.3 The general Bid Price shall be the price set forth in the space provided on the general Proposal Form. No general Bid shall be rejected (1) because of error in setting forth the name of a Subcontractor as long as the Subcontractors designated are clearly identifiable, or (2) because the Drawings and specifications do not accompany the Bid or are not submitted with the Bid. **FAILURE TO CORRECTLY STATE A SUBCONTRACTOR'S PRICE MAY BE CAUSE FOR REJECTION OF THE GENERAL BIDDER'S BID.**
- 5.4 Any General Contractor who violates any provision of Connecticut General Statutes Section 4b-95 may be disqualified from bidding on other contracts that are subject to the provisions of Chapter 60 of the General Statutes for a period not to exceed twenty-four months, commencing from the date on which the violation is discovered, for each violation.
- 5.5 The University reserves the right to accept or reject any or all Bids within 90 calendar days of the Bid opening, and the Bidder agrees that it may not modify, withdraw, or cancel its Bid and that its Bid Price will be firm for this 90 day period. This 90 day period may be extended by mutual agreement between the University and the Bidder.
- 5.6 The project will be awarded to the responsible qualified Bidder submitting the lowest Bid in compliance with the Bid requirements and within the budget, subject to the provisions of Connecticut General Statutes 10a-109a through 10a-109y.
- 5.7 The University reserves the right to elect to implement some, all or none of the Alternates and/or Options set forth in the Proposal forms, as may be in the best interest of the University. The low Bid shall be determined by taking the Base Price set forth in the Proposal form as selected by the University, plus the Alternates and/or Options selected by the University.
- 5.8 The Bidder agrees that if selected as General Contractor, he shall, within ten (10) days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the University, execute a contract in accordance with the terms of the general Bid.



**ARTICLE 6 POST- BID INFORMATION**

6.1 Affirmative Action

- 6.1.1 Pursuant to Connecticut General Statutes Section 46a-68d, if this project is estimated to cost more than \$50,000.00 then: In the event that the Bidder's Bid is accepted, after acceptance, but before a contract is awarded, the successful Bidder shall file and have approved by the Commission on Human Rights and Opportunities an Affirmative Action Plan. The Commission may provide for conditional acceptance of an Affirmative Action Plan provided written assurances are given by the Contractor that it will amend its plan to conform to affirmative action requirements. The University shall withhold 2% of the total Contract Price per month from any payment made to such Contractor until such time as the Contractor has developed an Affirmative Action Plan, and received the approval of the Commission. Notwithstanding the provisions of Connecticut General Statutes Section 46a-68d, a Contractor subject to the provisions of that Section may file a plan in advance of or at the same time as its Bid.
- 6.1.2 The University shall not enter into a contract with any Bidder or prospective Contractor unless the Bidder or prospective Contractor has satisfactorily complied with the provisions of Sections 4a-60, 32-9e, 46a-56 and 46a-68c to 46a-68f, inclusive of the Connecticut General Statutes, or submits a program for compliance acceptable to the Commission on Human Rights and Opportunities.
- 6.1.3 The Contractor shall designate an "Equal Opportunity Contract Compliance Officer" for the project. The Contractor designee, in addition to any other duties assigned by the Contractor, shall have the following responsibilities for the implementation of the Contractor Affirmative Action Plan (AAP) that is required for the project pursuant to Connecticut General Statutes Section's 46a-68c and 46a-68d.
- .1 Maintain a project EEO file to include all records, correspondence and other documentation related to the project AAP.
  - .2 Communicate to and inform all project Contractors and Subcontractors, regardless of tier, and labor referral organizations (if applicable) about project equal opportunity and AAP expectations and performance requirements.
  - .3 Compile all on-site Contractor MONTHLY EMPLOYMENT UTILIZATION REPORTS (form CHRO cc-257) and submit a cumulative report for the project each month to report on contractor compliance to project AAP hiring goals. The cumulative report shall be submitted to the contract awarding agency and to the Commission on Human Rights and Opportunities by the 15th day following the end of each calendar month during the pendency of the on-site construction work of the project.
  - .4 Attach a copy of your transmittal letter to CHRO as a document to be submitted with your invoice.
  - .5 Compile and submit a QUARTERLY SMALL CONTRACTOR AND MINORITY BUSINESS ENTERPRISE PAYMENT STATUS REPORT (form CHRO cc-258) to report on the participation of such Contractors identified to participate on the project. The report

shall be submitted to the contract awarding agency and to the Commission on Human Rights and Opportunities by the 15th day following the end of each calendar quarter during the pendency of the on-site construction work of the project.

- .6 Attach a copy of your transmittal letter to CHRO as a document to be submitted with your invoice.
- .7 Participate in project job meetings to inform project Contractors about project equal opportunity and AAP performance.
- .8 Coordinate "External Communication" section (employment outreach) of contractor AAP for all employment opportunities resultant during the course of the project from all project Contractors and maintain documentation of all contacts and responses.

## 6.2 Tax Identification

6.2.1 The Contractor shall furnish to the Owner, at the time of execution of the Contract, the following information

- .1 The identity and addresses of all subcontractors performing work on the project.
- .2 The Connecticut tax registration numbers of the Contractor and all subcontractors.
- .3 The Federal Social Security account numbers, or Federal Employer Identification numbers, or both, if applicable, for the Contractor and all subcontractors.

6.2.2 The aforementioned information shall be continuously updated by the Contractor to reflect any additions or changes to the previously identified subcontractors. Any final additions or changes to this information shall be submitted to the Owner with the Contractor's application for final payment.

## **ARTICLE 7 PERFORMANCE AND PAYMENT BONDS AND CERTIFICATE OF COMPLIANCE.**

### 7.1 Performance Bond

7.1.1 Prior to execution of the Contract, the successful Bidder shall substitute for the check or Bid Bond accompanying his Bid, an executed University of Connecticut Performance Bond, in the amount of 100 per cent of the Contract Price, conditioned upon the faithful performance of the Contract. See Form of Proposal for the appropriate form to be executed.

### 7.2 Labor and Material Payment Bond

7.2.1 Prior to execution of the Contract, the Bidder shall submit a University of Connecticut Labor and Material Payment Bond in the sum of not less than 100 per cent of the Contract Price, containing the condition that the Contractor will promptly pay for all material furnished and labor, supplied or performed in the prosecution of the work whether or not said material or labor is involved and/or becomes a component part of the structure or structures to be erected. Such additional bond shall be held for the use of each party who, as Subcontractor or otherwise, shall have furnished material or supplies or shall have performed labor in the prosecution of the work as herein provided and who has not been paid therefore. Such additional bond shall provide specifically that any person may bring suit thereon in the name

of the person suing, prosecute the same to the final judgment and have execution thereon for such sum or sums as may be justly due. The State shall not be liable to furnish counsel nor for the payment of any costs or expenses of any such suit. This bond is to be furnished pursuant to Section 49-41 of the General Statutes of Connecticut, and claims thereon shall be subject to the provisions of Connecticut General Statutes Section 49-42. Such forms will be provided with the Letter of Intent to award to be executed.

**7.3 Nonresident Contractor Certificate of Compliance**

7.3.1 Prior to execution of the Contract, the Bidder shall submit proof that ensures they and all subcontractors being contracted to perform work under the awarded bid; are State of Connecticut resident contractors. Such proof shall be in a form on the awarding Contractor's letter head signed by the owner or principle of the company having authority to ensure that all agreements entered into under this contract are in-state resident contractors. Should the awarding Contractor and/or subcontractors who will perform work under this contract, are nonresident of the State of Connecticut, the awarding Contractor must provide a Certificate of Compliance from the Department of Revenue Services (DRS) for those nonresident firms who will be under contract. This Certificate of Compliance is pursuant to Statue 12-430 as amended by 2005 Connecticut Public Acts 260, 6; Connecticut Agencies Regulations 12-430 (7)-1.

**7.4 General Provisions Regarding Bonds**

7.4.1 The aforementioned Performance and Payment bonds shall be provided in the forms required by the University, samples of which are appended hereto. If the Contractor is a Joint Venture, all such bonds shall name all joint ventures as principals. The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney. The above bonds shall be required for awards for which the total estimated cost of labor and materials under the Contract is at least \$100,000.00. The above bonds shall be acceptable to the University and, as a minimum, issued through a bonding company licensed to transact such business in the State of Connecticut and named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the "Treasury Department Circular 570."

**ARTICLE 8 AFFIDAVITS/ETHICS AFFIRMATIONS**

8.1 Affidavits/Ethics Affirmations to be completed in accordance with the instructions provided on the OPM website for each Affidavits/Ethics Affirmations.

**Form 5. Consulting Agreement Affidavit (for contract values >\$50,000)**

**Form 6. Affirmation of Receipt of State Ethics Laws Summary (for contract values >\$500,000)**

8.2 With regard to a State contract as defined in P.A. 07-1 having a value in a calendar year of \$50,000 or more or a combination of series of such agreements or contracts having a value of \$100,000 or more, the authorized signatory to this submission in response to the State's solicitation expressly state contractors of state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice. See attached **SEEC Form 11.**

Obtain OPM has posted the approved Forms on the OPM Web site -

<http://www.opm.state.ct.us/secr/forms/ContractAffidavitRequirements.htm>

**ARTICLE 9 CONTRACT**

**9.1** A draft of the contract has been provided with the bid documents. The University reserves the right to modify the contract or wave any informality as it deems to be in the best interest of the University. By submitting a bid the Contractor accepts the contract and any modifications that the University deems necessary to it without exception. Exceptions to the contract submitted by the Contractor at any time will not be considered.

UNIVERSITY OF CONNECTICUT  
STUDENT UNION SENIOR SQUARE  
#201642

**REQUEST FOR INFORMATION FORM**

*PLEASE TYPE -OR- PRINT / SEE INVITATION AND ADDENDA'S FOR RFI DEADLINE*

**TO:** The University of Connecticut.  
**Fax (860) 486-1953**

**FROM:** \_\_\_\_\_  
(Name of Bidding Firm)

**ATTN:** Walt Dalia

**Contact Name:** \_\_\_\_\_

**RFI Deadline:** See Invitation/Bid Clarification Phone # : \_\_\_\_\_ Fax # : \_\_\_\_\_

**Specification Section:** \_\_\_\_\_

**Drawing No. / Drawing Date:** \_\_\_\_\_

**QUESTION (Please be specific):** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**RESPONSE :** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Signature :** \_\_\_\_\_

**Date:** \_\_\_\_\_

**NOTE:** All questions must be submitted in writing before the prescribed RFI Deadline. No verbal questions will be answered. All questions must be submitted in writing on this RFI Form. All answers to RFI's will be issued in a Bidder's Clarification.



**STATE OF CONNECTICUT**  
**STATE ELECTIONS ENFORCEMENT COMMISSION**  
20 Trinity Street Hartford, Connecticut 06106—1628

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**SEEC FORM 11**

**NOTICE TO EXECUTIVE BRANCH STATE CONTRACTORS AND PROSPECTIVE STATE CONTRACTORS OF CAMPAIGN CONTRIBUTION AND SOLICITATION BAN**

This notice is provided under the authority of Connecticut General Statutes 9-612(g)(2), as amended by P.A. 07-1, and is for the purpose of informing state contractors and prospective state contractors of the following law (italicized words are defined below):

**Campaign Contribution and Solicitation Ban**

*No state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor, with regard to a state contract or state contract solicitation with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall make a contribution to, or solicit contributions on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee;*

In addition, no holder or principal of a holder of a valid prequalification certificate, shall make a contribution to, or solicit contributions on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of State senator or State representative, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

**Duty to Inform**

State contractors and prospective state contractors are required to inform their principals of the above prohibitions, as applicable, and the possible penalties and other consequences of any violation thereof.

**Penalties for Violations**

Contributions or solicitations of contributions made in violation of the above prohibitions may result in the following civil and criminal penalties:

Civil penalties—\$2000 or twice the amount of the prohibited contribution, whichever is greater, against a principal or a contractor. Any state contractor or prospective state contractor which fails to make reasonable efforts to comply with the provisions requiring notice to its principals of these prohibitions and the possible consequences of their violations may also be subject to civil penalties of \$2000 or twice the amount of the prohibited contributions made by their principals.

Criminal penalties—Any knowing and willful violation of the prohibition is a Class D felony, which may subject the violator to imprisonment of not more than 5 years, or \$5000 in fines, or both.

**Contract Consequences**

Contributions made or solicited in violation of the above prohibitions may result, in the case of a state contractor, in the contract being voided.

Contributions made or solicited in violation of the above prohibitions, in the case of a prospective state contractor, shall result in the contract described in the state contract solicitation not being awarded to the prospective state contractor, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

**UNIVERSITY OF CONNECTICUT  
STUDENT UNION SENIOR SQUARE  
#201642**

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The State will not award any other state contract to anyone found in violation of the above prohibitions for a period of one year after the election for which such contribution is made or solicited, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

Additional information and the entire text of P.A 07-1 may be found on the website of the State Elections Enforcement Commission, [www.ct.gov/seec](http://www.ct.gov/seec). Click on the link to "State Contractor Contribution Ban."

Definitions:

"State contractor" means a person, business entity or nonprofit organization that enters into a state contract. Such person, business entity or nonprofit organization shall be deemed to be a state contractor until December thirty-first of the year in which such contract terminates. "State contractor" does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Prospective state contractor" means a person, business entity or nonprofit organization that (i) submits a response to a state contract solicitation by the state, a state agency or a quasi-public agency, or a proposal in response to a request for proposals by the state, a state agency or a quasi-public agency, until the contract has been entered into, or (ii) holds a valid prequalification certificate issued by the Commissioner of Administrative Services under section 4a-100. "Prospective state contractor" does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Principal of a state contractor or prospective state contractor" means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a state contractor or prospective state contractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a state contractor or prospective state contractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a state contractor or prospective state contractor, which is not a business entity, or if a state contractor or prospective state contractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any state contractor or prospective state contractor who has *managerial or discretionary responsibilities with respect to a state contract*, (v) the spouse or a *dependent child* who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the state contractor or prospective state contractor.

"State contract" means an agreement or contract with the state or any state agency or any quasi-public agency, let through a procurement process or otherwise, having a value of fifty thousand dollars or more, or a combination or series of such agreements or contracts having a value of one hundred thousand dollars or more in a calendar year, for (i) the rendition of services, (ii) the furnishing of any goods, material, supplies, equipment or any items of any kind, (iii) the construction, alteration or repair of any public building or public work, (iv) the acquisition, sale or lease of any land or building, (v) a licensing arrangement, or (vi) a grant, loan or loan guarantee. "State contract" does not include any agreement or contract with the state, any state agency or any quasi-public agency that is exclusively federally funded, an education loan or a loan to an individual for other than commercial purposes.

"State contract solicitation" means a request by a state agency or quasi-public agency, in whatever form issued, including, but not limited to, an invitation to bid, request for proposals, request for information or request for quotes, inviting bids, quotes or other types of submittals, through a competitive procurement process or another process authorized by law waiving competitive procurement.

**UNIVERSITY OF CONNECTICUT  
STUDENT UNION SENIOR SQUARE  
#201642**

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“Managerial or discretionary responsibilities with respect to a state contract” means having direct, extensive and substantive responsibilities with respect to the negotiation of the state contract and not peripheral, clerical or ministerial responsibilities.

“Dependent child” means a child residing in an individual’s household who may legally be claimed as a dependent on the federal income tax of such individual.

“Solicit” means (A) requesting that a contribution be made, (B) participating in any fund-raising activities for a candidate committee, exploratory committee, political committee or party committee, including, but not limited to, forwarding tickets to potential contributors, receiving contributions for transmission to any such committee or bundling contributions, (C) serving as chairperson, treasurer or deputy treasurer of any such committee, or (D) establishing a political committee for the sole purpose of soliciting or receiving contributions for any committee. Solicit does not include: (i) making a contribution that is otherwise permitted by Chapter 155 of the Connecticut General Statutes; (ii) informing any person of a position taken by a candidate for public office or a public official, (iii) notifying the person of any activities of, or contact information for, any candidate for public office; or (iv) serving as a member in any party committee or as an officer of such committee that is not otherwise prohibited in this section.

**END OF INSTRUCTION TO BIDDERS**



**BID SUBMISSION**  
**FOR**  
**Student Union Senior**  
**Square**

**UNIVERSITY OF CONNECTICUT**  
**STORRS CAMPUS**  
Storrs, Connecticut

**PROJECT NUMBER: #201642**

**UConn**

**UNIVERSITY OF CONNECTICUT**

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**Proposal Submission Checklist**

The following documents and information shall be submitted and included as your bid proposal. All documents must be submitted in a sealed envelope reflecting the submitting firm's name and address; addressed to CPCA attention to the appropriate purchasing agent, clearly stating the project name and project number. All required documents are to be included and executed in their original condition as issued.

- Ethics Forms 5 (if contract value is > \$50,000) and 6 (if contract value is > \$500,000).
- Bid Bond
- Fully executed Form of Proposal
- Copies of prequalification certificate and an updated statement as prescribed by Commissioner of Administrative Services for the State of Connecticut.
- How did you learn about this Project?
  - Hartford Courant
  - Waterbury Republican
  - Norwich Bulletin
  - DAS
  - CPCA Website
  - Other \_\_\_\_\_

**Contractors Certification**

**By submitting a bid proposal, the bidder is attesting to the review, reading, understanding, and acceptance of the information and requirements of the project contained within the bid documents without exception. By submitting a bid proposal, the Bidder represents that they have examined the site, and accept the conditions under which the work will be performed and we have read, evaluated, understand, and accepted all the Contract Documents, including those documents provided for on the Disk, and their content in their entirety and have included all provisions necessary to accomplish all work according to the information and requirements prescribed therein without exception.**

SUBMITTED BY:

Firm: \_\_\_\_\_

Date: \_\_\_\_\_

Address: \_\_\_\_\_

SUBMITTED BY: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

Telephone: \_\_\_\_\_

**FORM OF PROPOSAL**

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University of Connecticut  
Walt Dalia, Purchasing Agent II  
Capital Project & Contract Administration  
3 North Hillside Road, Unit 6047  
Storrs, Connecticut 06269-6047

Dear Mr. Dalia:

1. In accordance with Connecticut General Statutes Sections 10a-109a through 10a-109y and pursuant to, and in compliance with your Invitation to Bid, the Notice and Instructions to Bidders, the Form of Contract, including the conditions thereto, the form of required bond, I (we) propose to furnish the labor and/or materials installed as required for the project named and numbered on the FORM OF PROPOSAL of this proposal to the extent of the Proposal submitted herein, furnishing all necessary equipment, machinery, tools, labor and other means of construction, and all materials specified in the manner and at the time prescribed strictly in accordance with the provisions of the Contract including specifications and/or drawings together with all addenda issued and received prior to the scheduled closing time for the receipt of the bids, and in conformity with requirements of the University of Connecticut and any laws or departmental regulations of the State of Connecticut or of the United States which may affect the same, for and in consideration of the price(s) stated on the said FORM OF PROPOSAL, hereof.
  
2. The Lump Sum Base Bid by me (us) on the FORM OF PROPOSAL includes all work indicated on the drawings and/or described in the specifications (including the furnishing and installing of all required materials, labor, equipment and allowances where applicable), except:
  - A. Work covered by Alternates as may be listed on the FORM OF PROPOSAL.
  - B. Contingent work covered by Unit Prices as may be listed on the FORM OF PROPOSAL.
  - C. Work covered by Options as may be listed on the FORM OF PROPOSAL.
  
3. This proposal is submitted subject to and in compliance with the foregoing and following conditions and/or information.
  - A. AWARD: All proposals shall be subject to the provisions and requirements of the Bid Documents and for purpose of award, consideration shall be given only to proposals submitted by qualified and responsible bidders.
  - B. COMMENCEMENT AND COMPLETION OF WORK: Contractor shall commence and complete the work in accordance with the requirements of the Contract Documents.
  - C. If the Contractor fails to complete the work within the time required by the Contract Documents, the University shall have the right to assess liquidated damages as provided in Paragraph 9.11 of the General Conditions.
  - D. CONTRACTORS INSURANCE REQUIRED:
    1. The limits of liability and coverages shall be those set forth in Article 11 of the General Conditions included with this bid package (or as previously executed with the on-call trade contract).
  - E. REQUIRED PERCENTAGES OF WORK AND SET-ASIDES

FORM OF PROPOSAL

- .1 If awarded this contract, we (I) as the General Contractor on this Project shall be required to perform not less than 10% of the completed dollar value of the Work with its own forces.
- .2 We (I) as the General Contractor on this project shall award not less than 25% of the total Contract Price to subcontractors who are certified and eligible to participate under the State of Connecticut Small Business Set Aside Program, of which 6.25% (of the total Contract) must be awarded to Women Owned or Minority Businesses. This requirement must be met even if the General Contractor is certified and eligible to participate in the Small Business Set Aside Program. To facilitate compliance with this requirement for set aside subcontractors, submit a list of certified set aside contractors to be used on this project along with the dollar amounts to be paid to each, on the form provided, and a copy of their current certification must be attached. This information will be considered as part of your bid proposal and failure to comply with any portion of this requirement, including but not limited to failure to list or meet the necessary dollar amount of percentage of the bid price will be cause to reject your bid.

F. NONDISCRIMINATION & LABOR RECRUITMENT:

We (I) agree that the Contract awarded for this project shall be subject to the Executive Orders No. Three and Seventeen, promulgated June 16, 1971 and February 15, 1973 respectively and to the Guidelines and Rules of the State Labor Department implementing Executive Order No. Three and further agree to submit reports of Compliance Staffing on Labor Department Form E.O.3-1, when and as requested.

G. FEDERAL & STATE WAGE DETERMINATIONS AND PRICING CONSIDERATION:

- .1 Each contractor who is awarded a contract on or after October 1, 2002 shall be subject to provisions of the Connecticut General Statutes, Section 31-53 as amended by Public Act 02-69, "An Act Concerning Annual Adjustments to Prevailing Wages".
- .2 In determining bid price, consideration should be given to Section 31-53 of the General Statutes of Connecticut as amended by Public Act 02-69, "An Act Concerning Annual Adjustments to Prevailing Wages". Such prevailing wage adjustment will not be considered a basis for an annual contract adjustment.
- .3 The State of Connecticut Labor Department Wage Schedule where required, shall be provided with these documents, typically with the Bidders' Convenience Package, or will be incorporated in the Contract Documents as an Addendum. At the time of bidding, the bidder agrees to accept the current prevailing wage scale, as well as any annual adjustment to the prevailing wage scale, as provided by the Connecticut Department of Labor. Wage Rates will be posted each July 1st on the Department of Labor website: [www.ctdol.state.ct.us](http://www.ctdol.state.ct.us) . Such prevailing wage adjustment will not be considered a basis for an annual contract amendment.

H. CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY & NON-SEGREGATED FACILITIES:

We (I) acknowledge that we (I) and our subcontractors are obligated to fill out the forms provided by the University of Connecticut Office of Capital Project and Contract Administration and to agree to certify to the compliance of non-segregated facilities.

FORM OF PROPOSAL

I. NOTICE TO EXECUTIVE BRANCH STATE CONTRACTORS AND PROSPECTIVE STATE CONTRACTORS OR CAMPAIGN CONTRIBUTION AND SOLICITATION BAN.

With regard to a State contract as defined in P.A. 07-1 having a value in a contract year of \$50,000 or more or a combination or series of such agreements or contracts having a value of \$100,000 or more, the authorized signatory to this submission in response to the State's solicitation expressly acknowledges receipt of the State Elections Enforcement Commission's notice advertising prospective principals of the contents of the notice. See Attachment SEEC Form 11.

4. ACCOMPANYING THIS PROPOSAL IS:

A. A CERTIFIED CHECK drawn to the order of the University of Connecticut in the amount of 10% of the Bid, i.e.:

\_\_\_\_\_ DOLLARS \$ \_\_\_\_\_

and drawn on the \_\_\_\_\_  
(STATE BANK & TRUST COMPANY)

\_\_\_\_\_ located at \_\_\_\_\_  
(A NATIONAL BANKING ASSOCIATION) (CITY & STATE)

which is understood shall be cashed and the proceeds thereof used so far as may be necessary to reimburse the State of Connecticut for losses and damages arising by virtue of my (our) failure to file the required Bonds and execute the required contract in this proposal as accepted by the University of Connecticut.

**OR;**

B. A BID BOND having as surety thereto a Surety Company for Companies authorized to transact business in the State of Connecticut and made out in the penal sum of 10% of the bid, (Bids \$50,000 and greater) i.e.:

\_\_\_\_\_ DOLLARS \$ \_\_\_\_\_

If the bidder is a joint venture, the Bid Bond shall specifically identify and include each joint venturer as a principal.

C. If the bidder is a joint venture, a copy of the executed Joint Venture Agreement shall be submitted along with the bid materials.

5. We (I), the undersigned, hereby declare that I am (we are) the only person(s) interested in the proposal and that it is without any connection with any other person making any bid for the same work. No person acting for, or employed by, the State of Connecticut is directly interested in this proposal, or in any contract which may be made under it, or in expected profits to arise therefrom. This proposal is made without directly or indirectly influencing or attempting to influence any other person or corporation to bid or refrain from bidding or to influence the amount of the bid of any other person or corporation. This proposal is made in good faith without collusion or connection with any other person bidding for the same work and this proposal is made with distinct reference and relation to the plans and specifications prepared for this Contract. I (We) further declare that in regard to the conditions affecting the work to be done and the labor

**FORM OF PROPOSAL**

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and materials needed, this proposal is based solely on my (our) investigation and research and not in reliance upon any representations of any employee, officer or agent of the State.

6. Each class of work set forth in a separate Section of the Specifications and designated as a subtrade in Item 2A of the proposal pages shall be the matter of a subcontract made in accordance with the procedures set forth in the Bid and Contract Documents.
7. The undersigned agrees that, if selected as General Contractor, he shall, within ten (10) days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the University of Connecticut, execute a contract in accordance with the terms of this general bid.
8. The undersigned agrees and warrants that he has made good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials under such contract and shall provide the Commission on Human Rights and Opportunities with such information as is requested by the Commission concerning his employment practices and procedures as they relate to the provisions of the Connecticut General Statutes governing contract requirements.
9. The undersigned acknowledges that should their submitted Form of Proposal fail to have included a copy of your firms prequalification certificate and an updated statement accompany their bid submission, that their bid will be invalid and considered non-responsive. Per CGS 4b-91 amended.

**A. STANDARD BID BOND:**

**NOW ALL MEN BY THESE PRESENTS,**

That we, \_\_\_\_\_ hereinafter called the principal, of \_\_\_\_\_, as principal, and \_\_\_\_\_, hereinafter called the Surety, a corporation organized and existing under the laws of the State of \_\_\_\_\_, and duly authorized to transact a surety business in the State of Connecticut, as Surety, are held and firmly bound unto the State of Connecticut, as obligee, in the penal sum of ten (10) percent of the amount of the bid set forth in a proposal hereinafter mentioned, \_\_\_\_\_, in lawful money of the United States of America, for the payment of which sum, well and truly to be made to the Obligee, the Principal and the Surety bind, themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

**THE CONDITION OF THIS OBLIGATION IS SUCH,**

That, whereas the Principal has submitted or is about to submit a proposal the other obligee related to a contract for the Project Referenced above.

**NOW, THEREFORE,** if the said contract be awarded to the Principal and the Principal shall, within such time as may be specified, enter in the said contract in writing with the State of Connecticut and give the required bonds, with surety acceptable to the Obligee, or if the Principal shall fail to do so, pay to Obligee the damages which the Obligee may suffer by reason of such failure not exceeding the penal sum of this bond, then this obligation shall be void, otherwise to remain in full force and effect.

SIGNED, SEALED AND DATED this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_

_____ Witness	_____ Surety	_____ Witness	_____ Principal
	_____ Title		_____ Title

B. The undersigned proposes to furnish all labor and material required for:

**STUDENT UNION SENIOR SQUARE  
#201462**

**University of Connecticut  
Storrs, CT**

in accordance with the accompanying Drawings and Specifications prepared by:

**University of Connecticut**

The Contract Price specified below subject to additions and deductions according to the terms of the Contract Documents.

**C. BID CLARIFICATIONS:**

The undersigned acknowledges receipt of the following Bid Clarifications issued during the bidding period and has included all changes therein in the above base bid amount.

Clarifications/Addenda # \_\_\_\_\_, Dated \_\_\_\_\_

Clarifications/Addenda # \_\_\_\_\_, Dated \_\_\_\_\_

Clarifications/Addenda # \_\_\_\_\_, Dated \_\_\_\_\_

Clarifications/Addenda # \_\_\_\_\_, Dated \_\_\_\_\_

**D. PROPOSED BASE CONTRACT PRICE:**

Having carefully examined the Bid Documents for the above reference project, and having visited the project site and examined all conditions affecting the work, the undersigned, upon written notice of award of contract, agrees to provide all labor, supervision, materials, tools, construction equipment, services, safety, insurance, bonds, and to pay all applicable taxes, and other costs necessary or required to complete the Work of this Bid in full accordance with all Bid Documents and within the required timeframe as indicated by the proposed schedule for the Lump Sum Bid of:

\_\_\_\_\_ **US Dollars**

**(\$ \_\_\_\_\_) (which incorporates all allowances as may be listed in the plans and specifications)**

**(Show the amount in both words and figures. In case of discrepancy, amount shown in words will govern.)**

The University reserves the right to elect to implement some, all or none of the Alternates and/or Options set forth in the Proposal forms, as may be in the best interest of the University. The low Bid shall be determined by taking the Base Price set forth in the Proposal form as selected by the University, plus the Alternates and/or Options selected by the University.



**E. SCHEDULE OF ALTERNATES:**

Provide Alternate Prices which reflect the work of the bid package under which this bid proposal was submitted and shall remain **valid for the life of the project** and include **all costs** for a complete installation. All pricing is inclusive of all costs of wages, applicable taxes, benefits, and applicable insurance. The Prices herein shall remain valid for the life of the project and include all costs for a complete installation. Alternate prices are good for both adds and deducts.

**Alternate No. 1: Tree Planitng**

**Base Bid: Provide all labor and materials as shown in the drawings**

**Alternate: Install four (4) large trees instead of the 6 trees as indicated in the drawings.**

**Add/Deduct: \$ \_\_\_\_\_**

**Alternate No. 2: Benches**

**Base Bid: Provide all labor and materials to install the benches and concrete pads as indicted in the drawings**

**Alternate: Provide all labor and materials as required for the installation of the concrete pads only**

**Add/Deduct: \$ \_\_\_\_\_**

**Alternate No. 3: Concrete Unit Pavers at entry plaza**

**Base Bid: Provide all labor and materials to install the clay unit pavers as indicated in the drawings**

**Alternate: Provide all labor and materials to install concrete unit pavers as indicated in the drawings**

**Add/Deduct: \$ \_\_\_\_\_**

**Alternate No. 4: Concrete pavement at entry plaza**

**Base Bid: Provide all labor and materials to install the clay unit pavers as indicated in the drawings**

**Alternate: Provide all labor and materials to install concrete walkway as detailed in the drawings instead of unit pavers, contraction joint pattern to be 2' x 2'**

**Add/Deduct: \$ \_\_\_\_\_**

**END OF ALTERNATES**

F. SCHEDULE OF UNIT PRICES:

All rates are inclusive of all costs of wages, applicable taxes, benefits, applicable insurance. The rates provided will be negotiated and included as part of the contract and of your subcontracts. The Unit Prices herein shall remain valid for the life of the project and include all costs for a complete installation. Unit prices are good for both adds and deducts.

<u>Unit Price</u>	<u>Description</u>	<u>Unit of Measurement</u>	<u>Add/Deduct Rate</u>
1	Install turf restoration as shown on the drawings and according to Division 32 Section "Turf and Grasses"	Per Square Foot	\$ _____
2	Install Concrete Sidewalk as shown in the drawings and according to Division 32 Section "Concrete Paving"	Per Square Foot	\$ _____
3	Provide exploratory excavation at location approved the University and according to Division 02 Section "Exploratory Excavations"	Per Cubic Foot	\$ _____
4	Unsatisfactory soil excavation and disposal off-site and replacement with satisfactory fill material or engineered fill from off-site, as required, according to Division 31 Section 31 2310 "Earthwork"	Per Cubic Yard of Soil Excavated	\$ _____
5	Classified rock excavation a disposal off-site and replacement with satisfactory fill material or engineered fill from off-site, as required, according to Division 31 Section 31 2310 "Earthwork"	Per Cubic Yard of Rock Excavated	\$ _____
6	Rock Excavation according to Division 31 2310 Section "Earthwork"	Per Cubic Yard	\$ _____

End of Unit Prices

**G. SCHEDULE OF LABOR RATES:**

The following are hourly wage rates for all tradesmen associated with this project for performing extra work. These rates are fully loaded (including benefits, applicable taxes, and worker compensation insurance) and are in accordance with the prevailing wages of the trade having jurisdiction in areas where the work is performed. The wage rates shall be valid for the life of the project. ***NOTE: Further, no mark-up shall be allowed on the premium time portion of the wage rate. At the request of the University, the Contractor will submit labor rate summary sheets, which justify all submitted labor rates. All rates are subject to thorough analysis and subject to reduction if deemed inaccurate by The University of Connecticut.***

TRADE: \_\_\_\_\_

Attachments: Y / N

Submit one sheet for each Labor Trade (Division) used on project. Copy as needed.

<u>Foreman</u>	Straight <u>Time</u>	Time and <u>One Half</u>	Double <u>Time</u>
_____	\$ _____	\$ _____	\$ _____
_____	\$ _____	\$ _____	\$ _____
_____	\$ _____	\$ _____	\$ _____
_____	\$ _____	\$ _____	\$ _____

<u>Journeyman</u>	Straight <u>Time</u>	Time and <u>One Half</u>	Double <u>Time</u>
_____	\$ _____	\$ _____	\$ _____
_____	\$ _____	\$ _____	\$ _____
_____	\$ _____	\$ _____	\$ _____
_____	\$ _____	\$ _____	\$ _____

<u>Apprentice</u>	Straight <u>Time</u>	Time and <u>One Half</u>	Double <u>Time</u>
_____	\$ _____	\$ _____	\$ _____
_____	\$ _____	\$ _____	\$ _____
_____	\$ _____	\$ _____	\$ _____
_____	\$ _____	\$ _____	\$ _____
_____	\$ _____	\$ _____	\$ _____

<u>Laborer</u>	Straight <u>Time</u>	Time and <u>One Half</u>	Double <u>Time</u>
_____	\$ _____	\$ _____	\$ _____
_____	\$ _____	\$ _____	\$ _____
_____	\$ _____	\$ _____	\$ _____
_____	\$ _____	\$ _____	\$ _____
_____	\$ _____	\$ _____	\$ _____

End Labor Rates

**UNIVERSITY OF CONNECTICUT  
STUDENT UNION SENIOR SQUARE  
#201642**

**FORM OF PROPOSAL**

**H. SCHEDULE OF VALUES:**

The undersigned agrees that the Schedule of Values submitted with this Bid is a true representation of the distribution of the costs of this project and equals the Stipulated Sum shown above. The Schedule of Values is an integral part of this proposal. Please indicate N/A for those divisions of work not applicable. The costs provided below include the complete cost for furnishing and installing of materials, labor, and equipment required to provide the complete scope of work for each specified division (includes the costs of applicable taxes, insurance, bonds, overhead, profit, small tools, travel, parking, supervision, etc.). The "TOTAL" price must equal your total lump sum bid proposal.

<b>Division</b>	<b>Group</b>	
01	General Conditions	\$
02	Existing Conditions	\$
03	Concrete	\$
04	Masonry	\$
05	Metals	\$
06	Wood, Plastics, Composites	\$
07	Thermal & Moisture Protection	\$
08	Openings	\$
09	Finishes	\$
10	Specialties	\$
11	Equipment	\$
12	Furnishings	\$
13	Special Construction	\$
14	Conveying Equipment	\$
*21	Fire Suppression	\$
22	Plumbing	\$
*23	HVAC Heating, Ventilating, Air Conditioning	\$
25	Integrated Automation	\$
26	Electrical	\$
27	Communications	\$
28	Electronic Safety and Security	\$
*31	Earthwork	\$
32	Exterior Improvements	\$
33	Utilities	\$
34	Transportation	\$
35	Waterway and Marine Construction	\$
*40	Process Integration	\$
41	Material Process & Handling Equipment	\$
42	Process Heating, Cooling & Drying Equipment	\$
43	Process Gas & Liquid Handling, Purification & Storage Eqmt.	\$
44	Pollution & Waste Control Equipment	\$
45	Industry Specific Manufacturing Equipment	\$
46	Water & Wastewater Equipment	\$
*48	Electrical Power Generation	\$
Insurance		\$
Bonds		\$
Allowances	(where applicable)	\$
<b>TOTAL</b>		\$

\*Gap in numerical sequence, reserved for future expansion

**FORM OF PROPOSAL**

**I. The subdivision of Work in the proposed Contract Price is as follows:**

**ITEM 1 WORK BY GENERAL CONTRACTOR:**

For all work other than that to be done by subcontractors included in Item 2A and Item 2B.

\$ \_\_\_\_\_ **(ITEM 1)**

**Note:** In accordance with paragraph 3.E.1 this amount, together with work by the general contractor as listed in Item 2A below, must be at least 10% of the total bid price.

**ITEM 2A WORK BY SUBCONTRACTORS NAMED:**

Subcontractors and prices for the following trades must be listed (if such prices exceed \$25,000). However, the general bidder may list himself together with his price if he customarily performs any of the trades specified. If the general contractor requires a performance and/or labor & material payment bond then the general contractor must indicate below which of the subcontractors are subject to this requirement. The amount (%) shall not exceed the subcontractor's price listed below.

DESCRIPTION	NAME OF SUBCONTRACTOR	DOLLAR AMOUNT	LABOR & MATERIAL BOND	PERFORMANCE BOND
MASONRY				
ELECTRICAL				
MECHANICAL WITHOUT HVAC				
HVAC				

**A copy of the executed agreement between the successful bidder and the named subcontractors above must be presented to the Office of CPCA at time of contract signing. The contract may not be executed until copies of executed agreements are received by CPCA.**

**ITEM 2B WORK BY SUBCONTRACTORS NOT NAMED:**

\$ \_\_\_\_\_  
**(INCLUDES ALL SUBCONTRACT WORK NOT LISTED IN ITEM 2A)**

The undersigned agrees that each of the subcontractors listed on this FORM OF PROPOSAL will be used for the work indicated at the amount stated, unless a substitution is permitted by the University.

**J. SET-ASIDE CONTRACTOR SCHEDULE**

FORM OF PROPOSAL

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In accordance with Section 5.2 of our Notice and Instructions to Bidders, it is a requirement to list below the names of each currently certified set aside contractor anticipated to be used for this project, along with the dollar amount to be paid each contractor.

The responsibility for listing a qualified and certified set aside contractor, Women Owned Businesses or Minority Businesses, rests solely with the proposer and not the State. **We acknowledge that listing a subcontractor who does not qualify shall be considered the same as not listing one at all and the proposal may be considered non-responsive and subject to rejection.**

<u>Name</u>	<u>Address</u>	<u>Amount</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

The amount is NOT LESS THAN 25% of the proposed base contract price as stated on the Form of Proposal, Section D.

**CERTIFICATE OF ELIGIBILITY HAS BEEN OBTAINED THROUGH THE FOLLOWING WEBSITE;  
<https://www.biznet.ct.gov/SupplierDiversity/SDSearch.aspx>  
FOR EACH OF THE NAMED CONTRACTORS AND IS BEING SUBMITTED WITH THIS FORM.**

The Undersigned agrees that each of the subcontractors listed on the proposal form will be used for the work indicated at the amount stated, unless a substitution is permitted by the awarding authority.

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Company Name



**PART II - Bidder Nondiscrimination Policies and Procedures**

<p>1. Does your company have a written Affirmative Action/Equal Employment Opportunity statement posted on company bulletin boards? Yes__ No__</p>	<p>7. Do all of your company contracts and purchase orders contain non-discrimination statements as required by Sections 4a-60 &amp; 4a-60a Conn. Gen. Stat.? Yes__ No__</p>
<p>2. Does your company have the state-mandated sexual harassment prevention in the workplace policy posted on company bulletin boards? Yes__ No__</p>	<p>8. Do you, upon request, provide reasonable accommodation to employees, or applicants for employment, who have physical or mental disability? Yes__ No__</p>
<p>3. Do you notify all recruitment sources in writing of your company's Affirmative Action/Equal Employment Opportunity employment policy? Yes__ No__</p>	<p>9. Does your company have a mandatory retirement age for all employees? Yes__ No__</p>
<p>4. Do your company advertisements contain a written statement that you are an Affirmative Action/Equal Opportunity Employer? Yes__ No__</p>	<p>10. If your company has 50 or more employees, have you provided at least two (2) hours of sexual harassment training to all of your supervisors? Yes__ No__ NA__</p>
<p>5. Do you notify the Ct. State Employment Service of all employment openings with your company? Yes__ No__</p>	<p>11. If your company has apprenticeship programs, do they meet the Affirmative Action/Equal Employment Opportunity requirements of the apprenticeship standards of the Ct. Dept. of Labor? Yes__ No__ NA__</p>
<p>6. Does your company have a collective bargaining agreement with workers? Yes__ No__</p> <p>6a. If yes, do the collective bargaining agreements contain non-discrimination clauses covering all workers? Yes__ No__</p> <p>6b. Have you notified each union in writing of your commitments under the nondiscrimination requirements of contracts with the state of Ct? Yes__ No__</p>	<p>12. Does your company have a written affirmative action Plan? If no, please explain. Yes__ No__</p>
	<p>13. Is there a person in your company who is responsible for equal employment opportunity? Yes__ No__ If yes, give name and phone number. _____ _____ _____</p>



**Part III - Bidder Subcontracting Practices**

1. Will the work of this contract include subcontractors or suppliers? Yes\_\_ No\_\_  
 1a. If yes, please list all subcontractors and suppliers and report if they are a small contractor and/or a minority business enterprise as defined on page 1 / use additional sheet if necessary)  
 1b. Will the work of this contract require additional subcontractors or suppliers other than those identified in 1a? Yes\_\_ No\_\_

**Part IV – Bidder Employment Information**

Date:

JOB CATEGORY	OVERALL TOTALS	WHITE (not of Hispanic origin)		BLACK (not of Hispanic origin)		HISPANIC		ASIAN or PACIFIC ISLANDER		AMERICAN INDIAN or ALASKAN NATIVE	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Management											
Business & Financial Ops											
Computer Specialists											
Architecture/Engineering											
Office & Admin Support											
Bldg/ Grounds Cleaning/Maintenance											
Construction & Extraction											
Installation, Maintenance & Repair											
Material Moving Workers											
TOTALS ABOVE											
Total One Year Ago											
FORMAL ON THE JOB TRAINEES (ENTER FIGURES FOR THE SAME CATEGORIES AS ARE SHOWN ABOVE)											
Apprentices											
Trainees											

**PART V - Bidder Hiring and Recruitment Practices**

1. Which of the following recruitment sources are used by you? (check yes or not and report percent used)				2. Check (x) any of the below listed requirements that you use as a hiring qualification		3. Describe below any other practices or actions that you take which show that you hire, train, and promote employees without discrimination?
SOURCE	YES	NO	% of applicants provided by source	(x)		
State Employment Service					Work Experience	
Private Employment Agencies					Ability To Speak Or Write English	
Schools And Colleges					Written Tests	
Newspaper Advertisements					High School Diploma	
Walk Ins					College Degree	
Present Employees					Union Membership	
Labor Organizations					Personal Recommendations	
Minority/Community Organizations					Height Or Weight	
Others Please Identify					Car Ownership	
					Arrest Record	
					Wage Garnishments	

Certification (Read this form and check your statements on it CAREFULLY before signing).

I certify that the statements made by me on this BIDDER CONTRACT COMPLIANCE MONITORING REPORT are complete and true to the best of my knowledge and belief, and are made in good faith. I understand that if I knowingly make any misstatements of facts, I am subject to be declared in non-compliance with Section 4a-60, 4a-60a, and related sections of the CONN. GEN. SAT.

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date Signed)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Telephone)

## Connecticut Economic Impact Form

This form is intended to gather general Connecticut economic impact information from prospective suppliers. This form shall be updated with each solicitation. This form is for informational gathering purposes only and will not be used in the evaluation of a prospective supplier's qualifications.

Date: \_\_\_\_\_

Company Name: \_\_\_\_\_

Location (City, State) of Principal Place of Business: \_\_\_\_\_

\_\_\_\_\_

Date Registered to do Business in Connecticut: \_\_\_\_\_

Number of Connecticut Locations: \_\_\_\_\_

Number of Connecticut Employees: \_\_\_\_\_

Annual Payroll Paid to Connecticut State Residents: \_\_\_\_\_

Annual Taxes, Licenses, Fees Paid to Connecticut (this may be payroll, franchise, service taxes, etc.): \_\_\_\_\_

Annual Rent Paid within Connecticut or value of Real Property: \_\_\_\_\_

Annual Utilities Paid within Connecticut: \_\_\_\_\_

Amount paid to Major partners or suppliers in Connecticut: \_\_\_\_\_

# CODE OF CONDUCT FOR UNIVERSITY OF CONNECTICUT VENDORS

The University of Connecticut (“UConn”) has a longstanding commitment to the protection and advancement of socially responsible practices that reflect respect for fundamental human rights and the dignity of all people. UConn strives to promote basic human rights and appropriate labor standards for all people throughout its supply chain. Promoting these values in concrete practice is the central charge of the President’s Committee on Corporate Social Responsibility (<http://csr.uconn.edu/>).

UConn is also committed to building a safe, healthy and sustainable environment through the conservation of natural resources, increasing its use of environmentally responsible products, materials and services (including renewable resources), and preventing pollution and minimizing waste through reduction, reuse and recycling. UConn is proactive about purchasing products that have these environmental attributes or meet recognized environmental standards, when practicable, and buying from entities committed to the support of campus sustainability goals. The University seeks to partner and contract with vendors that demonstrate a similar commitment to these values. Selected vendors may be required to provide a comprehensive summary report of their corporate social and environmental practices.

## **Principal Expectations**

The principal expectations set forth below reflect the minimal standards UConn’s vendors are required to meet.

**Nondiscrimination.** It is expected that vendors will not discriminate in hiring, employment, salary, benefits, advancement, discipline, termination or retirement on the basis of race, color, religion, gender, nationality, ethnicity, alienage, age, disability or marital status, and will comply with all federal nondiscrimination laws and state nondiscrimination laws<sup>1</sup>, including Chapter 814c of the Connecticut General Statutes (Human Rights and Opportunities), as applicable, and further will provide equal employment opportunity irrespective of such characteristics, including complying, if applicable, with Federal Executive Order 1124b, and the Rehabilitation Act of 1973.

**Freedom of Association and Collective Bargaining.** It is expected that vendors will respect their employees’ rights of free association and collective bargaining, including, if applicable, complying with the National Labor Relations Act, and, if applicable, Chapters 561 and 562 of the Connecticut General Statutes (Labor Relations Act, Labor Disputes) and Chapters 67 and 68 of the Connecticut General Statutes (State Personnel Act, Collective Bargaining for State Employees).

**Labor Standard Regarding Wages, Hours, Leaves and Child Labor.** It is expected that vendors will respect their employees’ rights regarding minimum and prevailing wages, payment of wages, maximum hours and overtime, legally mandated family, child birth and medical leaves, and return to work thereafter, and limitations on child labor, including, if applicable, the

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<sup>1</sup> Wherever this code refers to compliance with federal or state laws, that term includes compliance with any regulations duly promulgated pursuant to such laws.

rights set forth in the Federal Fair Labor Standards Act, the Federal Family and Medical Leave Act, the Federal Davis-Bacon Act and Chapters 557 and 558 of the Connecticut General Statutes (Employment Regulation, Wages).

**Health and Safety.** It is expected that vendors will provide safe and healthful working and training environments in order to prevent accidents and injury to health, including reproductive health, arising out of or related to or occurring during the course of the work vendors perform or resulting from the operation of vendors' facilities. Accordingly, it is expected that vendors and their subcontractors will perform work pursuant to UConn contracts in compliance with, as applicable, the Federal Occupational Safety and Health Act and Chapter 571 of the Connecticut General Statutes (Occupational Safety and Health Act).

**Forced Labor.** It is expected that vendors will not use or purchase supplies or materials that are produced using any illegal form of forced labor.

**Harassment or Abuse.** It is expected that vendors will treat all employees with dignity and respect, and that no employee will be subjected to any physical, sexual, psychological or verbal abuse or harassment. It is further expected that vendors will not use or tolerate the use of any form of corporal punishment.

**Environmental Compliance.** It is expected that vendors will comply with all applicable federal and state environmental laws and Executive Orders, including but not limited to Titles 22a and 25 of the Connecticut General Statutes (Environmental Protection and Water Resources protection) and Executive Order 14 (concerning safe cleaning products and services). UConn expects vendors will employ environmentally responsible practices in the provision of their products and services.

### **Preferential Standards**

The preferential standards set forth below reflect UConn's core values. UConn will seek to uphold these values by considering them as relevant factors in selecting vendors.

**Living Wages.** UConn recognizes and affirms that reasonable living wages are vital to ensuring that the essential needs of employees and their families can be met, and that such needs include basic food, shelter, clothing, health care, education and transportation. UConn seeks to do business with vendors that provide living wages so as to meet these basic needs, and further recognizes that compensation may need to be periodically adjusted to ensure maintenance of such living wages. Vendors are encouraged to demonstrate that they pay such living wages.

**International Human Rights.** For UConn, respect for human rights is a core value. UConn seeks to do business with vendors who do not contribute to or benefit from systemic violations of recognized international human rights and labor standards, as exemplified by the Universal Declaration of Human Rights.

**Foreign Law.** UConn encourages vendors and vendors' suppliers operating under foreign law to comply with those foreign laws that address the subject matters of this code, provided such foreign laws are consistent with this code. Vendors and their suppliers operating under foreign law are similarly encouraged to comply with the provisions of this code to the extent they can do so without violating the foreign law(s) they operate under.

**Environmental Sustainability.** UConn will prefer products and services that conserve resources, save energy and use safer chemicals, such as recycled, recyclable, reusable, energy efficient, carbon-neutral, organic, biodegradable or plant-based, in addition to products that are durable and easily repairable, and that meet relevant certification standards above and beyond those required by law. While UConn is not legally bound to comply with Connecticut General Statutes 4a-67a through 4a-67h concerning environmental sustainability standards in purchasing, it will nevertheless consider vendors' ability to meet those standards in rendering its purchasing decisions. Vendors are encouraged to demonstrate their commitment to environmental sustainability.

**Compliance Procedures**

Anyone who believes a vendor doing business with UConn has not complied or is not complying with this code may report such concerns to UConn's Office of Audit, Compliance and Ethics (OACE) at 1-888-685-2637 or <https://www.compliance-helpline.com>.

OACE has the authority to investigate such matters, and if warranted, recommend remedial action to the UConn administration.

Please review the material listed and per the signature of the authorized Company Official, all Expectations, Standards, and Procedures listed above will be in compliance in regards to this Contract.

---

Name of Company

---

Signature of Authorized Company Official

---

Date

**L. PROPOSER'S QUALIFICATION/RESPONSIBILITY STATEMENT**

The Proposer shall have already completed and submitted the Questionnaire and other submission required by the University in its Invitation to Pre-Qualify, regarding the Proposer's qualifications. If changed circumstances arising since the initial submission, or other facts have occurred which would result in a material change to any of the Proposer's initial responses or submissions, the Proposer shall provide any such supplementary, or revised information at this time, along with its Proposal.

1. State, identify any such changed circumstances or other facts and provide any such supplementary or revised information as described above, identifying specifically, by number and content, each prior question, response to the Questionnaire, or information changed, supplemented or revised. (Attach a separate sheet if necessary)

2. State "NONE" if there are no changes to be made. \_\_\_\_\_

Please note that if the end date of the time period covered by the information submitted during your pre-qualification is three or more months old, please provide current financial documentation demonstrating that your present financial position has remained the same, or showing and identifying any changes in any way, in relation to the audited financial statement you submitted with your pre-qualified application on this proposal.

Dated at	this	day of	20
Name of Organization:			
Signature:			
Print Name:			
Title:			
<b><u>Notary Statement:</u></b>			
Mr./Mrs./Ms.	being duly sworn deposes and says that he/she		
is the	of	and that the	
(Position or Title)		(Firm Name)	
answers to the foregoing questions and all statements therein contained are true and correct.			
Subscribed and sworn to before me this	day of	20	
Notary Public:			
My Commission Expires:	20		

M. ETHICS FORMS - A duly authorized representative of the company must sign these forms

- √ **These forms must be notarized and clearly show notary seal or acknowledged by a Commissioner of the Superior Court.**
- √ ALL REQUIRED forms, **must be completed, signed and returned** by the bidder/proposer as part of the bid/proposal/RFQ response package.
- √ Failure to submit ALL REQUIRED forms constitutes grounds for rejection of your bid/proposal/RFQ.
- √ If it is determined by the University of Connecticut and/or State of Connecticut that **any information requested was not referenced and submitted** with this bid/proposal/RFQ/LOI, and then such determination **will be just cause for disqualification of the bid/proposal/RFQ.**



OPM Ethics Form 5  
Rev. 10-01-11



STATE OF CONNECTICUT  
CONSULTING AGREEMENT AFFIDAVIT

*Affidavit to accompany a bid or proposal for the purchase of goods and services with a value of \$50,000 or more in a calendar or fiscal year, pursuant to Connecticut General Statutes §§ 4a-81(a) and 4a-81(b). For sole source or no bid contracts the form is submitted at time of contract execution.*

**INSTRUCTIONS:**

**If the bidder or vendor has entered into a consulting agreement, as defined by Connecticut General Statutes § 4a-81(b)(1):** Complete all sections of the form. If the bidder or contractor has entered into more than one such consulting agreement, use a separate form for each agreement. Sign and date the form in the presence of a Commissioner of the Superior Court or Notary Public. **If the bidder or contractor has not entered into a consulting agreement, as defined by Connecticut General Statutes § 4a-81(b)(1):** Complete only the shaded section of the form. Sign and date the form in the presence of a Commissioner of the Superior Court or Notary Public.

Submit completed form to the awarding State agency with bid or proposal. For a sole source award, submit completed form to the awarding State agency at the time of contract execution.

This affidavit must be amended if there is any change in the information contained in the most recently filed affidavit not later than (i) thirty days after the effective date of any such change or (ii) upon the submittal of any new bid or proposal, whichever is earlier.

**AFFIDAVIT:** [Number of Affidavits Sworn and Subscribed On This Day: \_\_\_\_\_]

I, the undersigned, hereby swear that I am a principal or key personnel of the bidder or contractor awarded a contract, as described in Connecticut General Statutes § 4a-81(b), or that I am the individual awarded such a contract who is authorized to execute such contract. I further swear that I have not entered into any consulting agreement in connection with such contract, **except for the agreement listed below:**

_____ Consultant's Name and Title		_____ Name of Firm (if applicable)
_____ Start Date	_____ End Date	_____ Cost
Description of Services Provided: _____		
_____		

Is the consultant a former State employee or former public official?       YES       NO

If YES: \_\_\_\_\_  
Name of Former State Agency      Termination Date of Employment

Sworn as true to the best of my knowledge and belief, subject to the penalties of false statement.

_____ Printed Name of Bidder or Contractor	_____ <b>Signature of Principal or Key Personnel</b>	_____ <b>Date</b>
_____ Printed Name (of above)		_____ Awarding State Agency

Sworn and subscribed before me on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
**Commissioner of the Superior Court  
or Notary Public**



**STATE OF CONNECTICUT**  
**NONDISCRIMINATION CERTIFICATION — Representation**  
**By Entity**  
**For Contracts Valued at Less Than \$50,000**

*Written representation that complies with the nondiscrimination agreements and warranties under Connecticut General Statutes §§ 4a-60(a)(1) and 4a-60a(a)(1), as amended*

**INSTRUCTIONS:**

For use by an entity (corporation, limited liability company, or partnership) when entering into any contract type with the State of Connecticut valued at less than \$50,000 for each year of the contract. Complete all sections of the form. Submit to the awarding State agency prior to contract execution.

**REPRESENTATION OF AN ENTITY:**

I, \_\_\_\_\_, \_\_\_\_\_, of \_\_\_\_\_,  
Authorized Signatory Title Name of Entity

an entity duly formed and existing under the laws of \_\_\_\_\_,  
Name of State or Commonwealth

represent that I am authorized to execute and deliver this representation on behalf of

\_\_\_\_\_ and that \_\_\_\_\_  
Name of Entity Name of Entity

has a policy in place that complies with the nondiscrimination agreements and warranties of Connecticut General Statutes §§ 4a-60(a)(1) and 4a-60a(a)(1), as amended.

\_\_\_\_\_  
Authorized Signatory

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name



**FORM OF PROPOSAL**

---

---

**Il pages within the Form of Proposal must be completed, signed by a duly authorized representative of the firm and returned as part of the bid/proposal/RFQ response package. NO FACSIMILE SIGNATURE PERMITTED**

- √ **If the form of proposal is being submitted by a Joint Venture, each Joint Venture shall sign the Proposal, and each Joint Venture agrees to be bound by the terms and conditions thereof.**
- √ **Failure to submit ALL REQUIRED forms constitutes grounds for rejection of your bid/proposal/RFQ.**
- √ **If it is determined by the University of Connecticut and/or State of Connecticut that any information requested but not referenced and submitted with this bid/proposal; such determination will be just cause for disqualification of the bid/proposal.**

(TO BE FILLED IN AND SIGNED BY THE BIDDER)

Signed the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.

Firm Name: \_\_\_\_\_

Street: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

Duly Authorized/Title: \_\_\_\_\_

(TO BE FILLED IN AND SIGNED BY JOINT VENTURE IF APPLICABLE)

Firm Name: \_\_\_\_\_

Street: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

Duly Authorized/Title: \_\_\_\_\_

Duly Authorized/Title: \_\_\_\_\_

**End of Form of Proposal**

**Standard Form of Agreement Between Owner and Contractor**  
*where the basis of payment is a Stipulated Sum*

Editing Template

CAUTION: Take care not to remove or otherwise edit Project Data fill-point areas (Basic Information, Contract Details and Project Team) when making edits to this document.

**The following document is the AIA 101 – Standard Form of Agreement Between Owner and Contractor as modified by the University of Connecticut. Modification Date: December 1, 2014**

AGREEMENT made as of the « » day of « » in the year « »  
*(In words, indicate day, month and year)*

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

« »« »  
« »  
« »  
« »

and the Contractor:  
*(Name, address and other information)*

« »« »  
« »  
« »  
« »

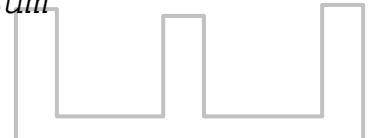
for the following Project:  
*(Name, location and description)*

« »  
« »  
« »

The Architect:  
*(Name, address and other information)*

« »« »  
« »  
« »  
« »

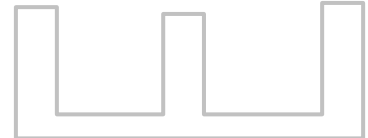
The Owner and Contractor agree as follows.



**ADDITIONS AND DELETIONS:**  
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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

AIA Document A201™-2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.



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## TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS
- 2 THE WORK OF THIS CONTRACT
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
- 5 PAYMENTS
- 6 DISPUTE RESOLUTION
- 7 TERMINATION OR SUSPENSION
- 8 MISCELLANEOUS PROVISIONS
- 9 ENUMERATION OF CONTRACT DOCUMENTS
- 10 INSURANCE AND BONDS

### ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, as amended, the AIA A201-2007 General Conditions, as amended, Drawings, Specifications, Bid Clarifications and Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

### ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others. The Contractor shall furnish and install all materials, labor and equipment required to provide \*\*\*\*\* as set forth in the Contract Documents enumerated in Article 9.

### ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.

Date of Commencement shall be fixed in the Notice to Proceed.

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

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than « » ( « » ) days from the date of commencement, subject to adjustments of this Contract Time as provided in the Contract Documents.

Liquidated Damages of \_\_\_\_\_ and 00/100 Dollars (\$ \_\_\_\_\_) per calendar day shall be assessed as provided in Paragraph 9.11 of the AIA A201-2007 General Conditions, as amended.

### ARTICLE 4 CONTRACT SUM

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

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents, and are hereby accepted by the Owner. The Contract Sum is the amount set forth in Section 4.1 and includes the amounts for the following alternates, if any, accepted by the Owner.

Alternate prices which reflect the work of the bid package under which this bid proposal was submitted shall remain valid for the life of the project, unless otherwise noted in the Contract Documents and include all costs for a complete installation. All pricing is inclusive of all costs of wages, applicable taxes, benefits, applicable insurance, overhead and profit. Alternate prices are good for both adds and deducts.

« »

§ 4.3 Unit prices, if any are as follows:

All rates are inclusive of all costs of wages, applicable taxes, benefits, applicable insurance, overhead and profit. The rates provided will be negotiated and included as part of a subcontract. The Unit Prices herein shall remain valid for the life of the project and include all costs for a complete installation. Unit prices are good for both adds and deducts.

Item	Units and Limitations	Price Per Unit (\$ 0.00)
------	-----------------------	--------------------------

§ 4.4 Allowances included in the Contract Sum, if any:

*(Identify allowance and state exclusions, if any, from the allowance price.)*

Item	Price
------	-------

## ARTICLE 5 PAYMENTS

### § 5.1 PROGRESS PAYMENTS

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

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month.

§ 5.1.3 The Owner shall make payments to the Contractor on each Application of Payment within 45 days of the Owner Representative's receipt of a properly submitted, correct and accepted Application, in accordance with the provisions of the AIA A201-2007 General Conditions, Article 9, as amended. The "Owner Representative" shall be as defined in AIA A201-2007 Paragraph 2.1.1.1.

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

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

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of Seven and One Half Percent (7.5%). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™-2007, General Conditions of the Contract for Construction;

- .2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of Seven and One Half Percent (7.5%);
- .3 In addition, if the State Commission on Human Rights and Opportunities (“CHRO”) authorizes the award or execution of this contract in advance of CHRO’s approval of the Affirmative Action Plan required to be submitted by the Contractor pursuant to Connecticut General Statutes Section 46a-68d, the Owner will withhold an additional two percent (2%) of the total contract price per month from any payment made to such Contractor, until such time as the Contractor has received approval from CHRO of the Affirmative Action Plan. Moreover, if CHRO determines through its complaint procedure and the hearing process provided in Connecticut General Statutes Section 46a-56(c) that a contractor or subcontractor is not complying with anti-discrimination statutes or contract provisions required under Connecticut General Statutes Section 4a-60 or 4a-60(a) or the provisions of Connecticut General Statutes Section 46a-68c to 46a-68f, inclusive, and if so ordered by the presiding officer after such hearing and upon a finding of noncompliance, the University shall retain two percent (2%) of the total contract price per month on the contract with the Contractor.
- .4 Subtract the aggregate of previous payments made by the Owner; and
- .5 Subtract amounts, if any, for which the Owner Representative has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201–2007.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

- .1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Owner Representative shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and  
*(Section 9.8.5 of AIA Document A201–2007 requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)*
- .2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201–2007.

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:

*(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Sections 5.1.6.1 and 5.1.6.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)*

N/A

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

## § 5.2 FINAL PAYMENT

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor’s responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner’s final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect’s final Certificate for Payment, subject to the provisions of the AIA A201-2007 General Conditions, Article 9, as amended.

## ARTICLE 6 DISPUTE RESOLUTION

### § 6.1 INITIAL DECISION MAKER

The University Master Planner and Chief Architect for Planning, Architectural & Engineering Services for the Owner and in the case of a project for UCONN Health (“UCH”), its Associate Vice President for Facilities



Development & Operations will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201–2007, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.

**§ 6.2 BINDING DISPUTE RESOLUTION**  
NOT USED.

**ARTICLE 7 TERMINATION OR SUSPENSION**

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2007.

**ARTICLE 8 MISCELLANEOUS PROVISIONS**

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 NOT USED.

§ 8.3 NOT USED.

§ 8.4 NOT USED.

§ 8.5 The Contractor's representative shall not be changed without ten days written notice to the Owner.

§ 8.6 Other provisions:

The Contractor is hereby specifically cautioned that unless specifically authorized, in writing, by the University's Interim Executive Vice President for Administration and Chief Financial Officer, or in the case of UCHC its Chief Administrative Officer, on a case by case basis, the Contractor shall have no right to use, and shall not use, in any manner, the name of the University of Connecticut, its officials or employees, or the Seal of the University:

- (a) in any advertising, publicity, promotion, nor;
- (b) to express or to imply any endorsement of Contractor's work product or services.

**§ 8.7 ETHICS AND COMPLIANCE**

In accordance with the University's compliance program, the University has in place an anonymous ethics and compliance reporting hotline service – 1-888-685-2637. Any person who is aware of unethical practices, fraud, violation of state laws or regulations or other concerns relating to University policies and procedures can report such matters anonymously. Such persons may also directly contact the University's compliance office at: Office of Audit, Compliance, and Ethics, 9 Walters Avenue, Unit 5084, Storrs, CT 06269-5084; Phone 860-486-4526; Fax 860-486-4527. As a provider of goods and/or services to the University, you are hereby required to notify your employees, as well as any subcontractors, who are involved in the implementation of this contract, of this reporting mechanism.

**§ 8.8 Joint Venture**

§ 8.8.1 If the Contractor is a joint venture, each joint venture partner shall be jointly, severally and individually responsible to the Owner for the performance of any and all obligations of the Contractor encompassed by this contract or as required by applicable law, and each joint venture partner shall be jointly, severally and individually liable to the Owner for any failures to perform such obligations in accordance with the contract or applicable law. In its dealings with the Owner, each joint venture partner shall have full authority to act in behalf of and bind the joint venture and any other joint venture partner. Each joint venture partner shall be considered to be the agent of the joint venture and of any other joint venture partner.

**ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS**

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A101–2007, Standard Form of Agreement Between Owner and Contractor.

§ 9.1.2 The General Conditions are AIA Document A201–2007, General Conditions of the Contract for Construction, as amended and attached hereto.

§ 9.1.3 NOT USED.

§ 9.1.4 The Specifications are those contained in the Project Manual dated \_\_\_\_\_ and are as follows:

Table of Contents – Exhibit A

§ 9.1.5 The Drawings are dated \_\_\_\_\_ and are as follows:

List of Drawings – Exhibit B

§ 9.1.6 The Bid Clarifications or Addenda, Exhibit C, if any, are as follows:

Number	Date	Pages

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

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents are as follows:

- The Invitation to Bid dated \_\_\_\_\_
- Notice and Instructions to Bidders \_\_\_\_\_
- Contractor’s Proposal Form dated \_\_\_\_\_
- Contractor’s Schedule of Labor Rates approved by the Owner attached as Exhibit D
- Contractor’s Critical Path Method (“CPM”) Schedule approved by the Owner attached as Exhibit E
- Project Manual dated \_\_\_\_\_
- Owner’s Contractor Environmental, Health & Safety Manual
- Payment and Performance Bonds

**ARTICLE 10 INSURANCE AND BONDS**

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201–2007.

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

\_\_\_\_\_  
**OWNER (Signature)**  
 \_\_\_\_\_, Executive VP for  
 Administration & CFO  
 \_\_\_\_\_  
**Duly Authorized: CGS §§ 10a-104 and 10a-108**  
 (Printed name and title)

\_\_\_\_\_  
**CONTRACTOR (Signature)**  
 \_\_\_\_\_  
 \_\_\_\_\_  
**« Duly Authorized »« »**  
 (Printed name and title)

Date: \_\_\_\_\_

Date: \_\_\_\_\_

**APPROVED AS TO FORM:**

\_\_\_\_\_  
Assistant/Associate Attorney General

Date Signed: \_\_\_\_\_

W  
T  
A  
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P  
M  
W  
T

**General Conditions of the Contract for Construction**

Editing Template

CAUTION: Take care not to remove or otherwise edit Project Data fill-point areas (Basic Information, Contract Details and Project Team) when making edits to this document.

The following document is the AIA A201 – General Conditions of the Contract for Construction as modified by the University of Connecticut.

Modification Date: December 1, 2014

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

<< >>>

THE OWNER:  
(Name and address)

<< >>< >  
<< >

THE CONTRACTOR:  
(Name and address)

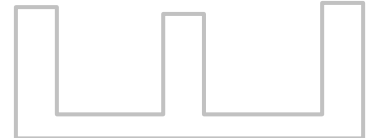
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THE ARCHITECT:  
(Name and address)

<< >>< >  
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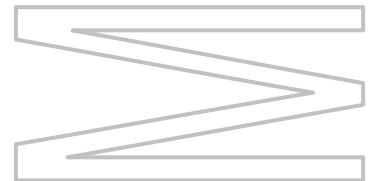
TABLE OF ARTICLES

- 1 GENERAL PROVISIONS
- 2 OWNER
- 3 CONTRACTOR
- 4 ARCHITECT
- 5 SUBCONTRACTORS
- 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
- 7 CHANGES IN THE WORK
- 8 TIME



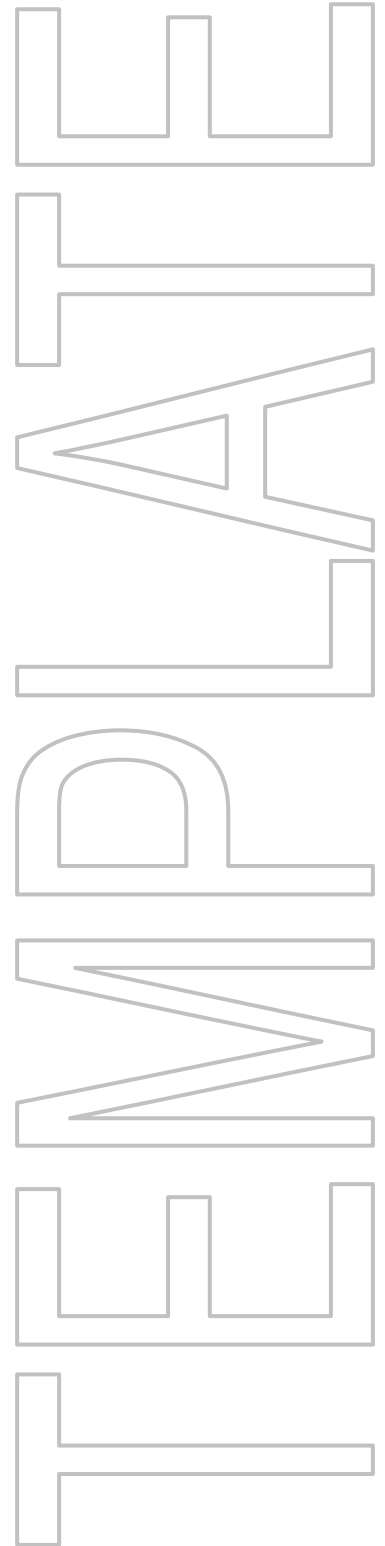
**ADDITIONS AND DELETIONS:**  
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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9 PAYMENTS AND COMPLETION  
10 PROTECTION OF PERSONS AND PROPERTY  
11 INSURANCE AND BONDS  
12 UNCOVERING AND CORRECTION OF WORK  
13 MISCELLANEOUS PROVISIONS  
14 TERMINATION OR SUSPENSION OF THE CONTRACT  
15 CLAIMS AND DISPUTES



## INDEX

(Numbers and Topics in Bold are Section Headings)

### Acceptance of Nonconforming Work

9.6.6, 9.9.3, **12.3**

Acceptance of Work

9.6.6, 9.8.2, 9.9.3, 9.10.1, 9.10.3, **12.3**

### Access to Work

**3.16**, 6.2.1, 12.1

Accident Prevention

10

Acts and Omissions

3.2, 3.3.2, 3.12.8, 3.18, 4.2.3, 8.3.1, 9.5.1, 10.2.5, 10.2.8, 13.4.2, 13.7.1, 14.1, 15.2

Addenda

1.1.1, 3.11.1

Additional Costs, Claims for

3.7.4, 3.7.5, 6.1.1, 7.3.7.5, 10.3, 15.1.4

### Additional Inspections and Testing

9.4.2, 9.8.3, 12.2.1, **13.5**

Additional Insured

11.1.4

### Additional Time, Claims for

3.2.4, 3.7.4, 3.7.5, 3.10.2, 8.3.2, **15.1.5**

### Administration of the Contract

3.1.3, **4.2**, 9.4, 9.5

Advertisement or Invitation to Bid

1.1.1

Aesthetic Effect

4.2.13

### Allowances

**3.8**, 7.3.8

All-risk Insurance

11.3.1, 11.3.1.1

### Applications for Payment

4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5.1, 9.6.3, 9.7.1, 9.10, 11.1.3

Approvals

2.1.1, 2.2.2, 2.4, 3.1.3, 3.10.2, 3.12.8, 3.12.9, 3.12.10, 4.2.7, 9.3.2, 13.5.1

### Arbitration

8.3.1, 11.3.10, 13.1.1, 15.3.2, **15.4**

## ARCHITECT

**4**

Architect, Definition of

**4.1.1**

Architect, Extent of Authority

2.4.1, 3.12.7, 4.1, 4.2, 5.2, 6.3.1, 7.1.2, 7.3.7, 7.4, 9.2.1, 9.3.1, 9.4, 9.5, 9.6.3, 9.8, 9.10.1, 9.10.3, 12.1, 12.2.1, 13.5.1, 13.5.2, 14.2.2, 14.2.4, 15.1.3, 15.2.1

Architect, Limitations of Authority and Responsibility

2.1.1, 3.12.4, 3.12.8, 3.12.10, 4.1.2, 4.2.1, 4.2.2, 4.2.3, 4.2.6, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 5.2.1, 7.4.1, 9.4.2, 9.5.3, 9.6.4, 15.1.3, 15.2

Architect's Additional Services and Expenses

2.4.1, 11.3.1.1, 12.2.1, 13.5.2, 13.5.3, 14.2.4

Architect's Administration of the Contract

3.1.3, 4.2, 3.7.4, 15.2, 9.4.1, 9.5

Architect's Approvals

2.4.1, 3.1.3, 3.5.1, 3.10.2, 4.2.7

Architect's Authority to Reject Work

3.5.1, 4.2.6, 12.1.2, 12.2.1

Architect's Copyright

1.1.7, 1.5

Architect's Decisions

3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 4.2.14, 6.3.1, 7.3.7, 7.3.9, 8.1.3, 8.3.1, 9.2.1, 9.4.1, 9.5, 9.8.4, 9.9.1, 13.5.2, 15.2, 15.3

Architect's Inspections

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 13.5

Architect's Instructions

3.2.4, 3.3.1, 4.2.6, 4.2.7, 13.5.2

Architect's Interpretations

4.2.11, 4.2.12

Architect's Project Representative

4.2.10

Architect's Relationship with Contractor

1.1.2, 1.5, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5.1, 3.7.4, 3.7.5, 3.9.2, 3.9.3, 3.10, 3.11, 3.12, 3.16, 3.18, 4.1.2, 4.1.3, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3.7, 12, 13.4.2, 13.5, 15.2

Architect's Relationship with Subcontractors

1.1.2, 4.2.3, 4.2.4, 4.2.6, 9.6.3, 9.6.4, 11.3.7

Architect's Representations

9.4.2, 9.5.1, 9.10.1

Architect's Site Visits

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.5

Asbestos

10.3.1

Attorneys' Fees

3.18.1, 9.10.2, 10.3.3

Award of Separate Contracts

6.1.1, 6.1.2

### Award of Subcontracts and Other Contracts for Portions of the Work

**5.2**

### Basic Definitions

**1.1**

Bidding Requirements

1.1.1, 5.2.1, 11.4.1

Binding Dispute Resolution

9.7.1, 11.3.9, 11.3.10, 13.1.1, 15.2.5, 15.2.6.1, 15.3.1, 15.3.2, 15.4.1

### Boiler and Machinery Insurance

**11.3.2**

Bonds, Lien

7.3.7.4, 9.10.2, 9.10.3

### Bonds, Performance, and Payment

7.3.7.4, 9.6.7, 9.10.3, 11.3.9, **11.4**

Building Permit  
3.7.1  
**Capitalization**  
**1.3**  
Certificate of Substantial Completion  
9.8.3, 9.8.4, 9.8.5  
**Certificates for Payment**  
4.2.1, 4.2.5, 4.2.9, 9.3.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7.1,  
9.10.1, 9.10.3, 14.1.1.3, 14.2.4, 15.1.3  
Certificates of Inspection, Testing or Approval  
13.5.4  
Certificates of Insurance  
9.10.2, 11.1.3  
**Change Orders**  
1.1.1, 2.4.1, 3.4.2, 3.7.4, 3.8.2.3, 3.11.1, 3.12.8, 4.2.8,  
5.2.3, 7.1.2, 7.1.3, **7.2**, 7.3.2, 7.3.6, 7.3.9, 7.3.10,  
8.3.1, 9.3.1.1, 9.10.3, 10.3.2, 11.3.1.2, 11.3.4, 11.3.9,  
12.1.2, 15.1.3  
**Change Orders, Definition of**  
**7.2.1**  
**CHANGES IN THE WORK**  
2.2.1, 3.11, 4.2.8, **7**, 7.2.1, 7.3.1, 7.4, 7.4.1, 8.3.1,  
9.3.1.1, 11.3.9  
**Claims, Definition of**  
**15.1.1**  
**CLAIMS AND DISPUTES**  
3.2.4, 6.1.1, 6.3.1, 7.3.9, 9.3.3, 9.10.4, 10.3.3, **15**,  
15.4  
Claims and Timely Assertion of Claims  
15.4.1  
**Claims for Additional Cost**  
3.2.4, 3.7.4, 6.1.1, 7.3.9, 10.3.2, **15.1.4**  
**Claims for Additional Time**  
3.2.4, 3.7.4.6.1.1, 8.3.2, 10.3.2, **15.1.5**  
**Concealed or Unknown Conditions, Claims for**  
**3.7.4**  
Claims for Damages  
3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.1.1,  
11.3.5, 11.3.7, 14.1.3, 14.2.4, 15.1.6  
Claims Subject to Arbitration  
15.3.1, 15.4.1  
**Cleaning Up**  
**3.15**, 6.3  
Commencement of the Work, Conditions Relating to  
2.2.1, 3.2.2, 3.4.1, 3.7.1, 3.10.1, 3.12.6, 5.2.1, 5.2.3,  
6.2.2, 8.1.2, 8.2.2, 8.3.1, 11.1, 11.3.1, 11.3.6, 11.4.1,  
15.1.4  
**Commencement of the Work, Definition of**  
**8.1.2**  
**Communications Facilitating Contract**  
**Administration**  
3.9.1, **4.2.4**  
Completion, Conditions Relating to  
3.4.1, 3.11, 3.15, 4.2.2, 4.2.9, 8.2, 9.4.2, 9.8, 9.9.1,  
9.10, 12.2, 13.7, 14.1.2  
**COMPLETION, PAYMENTS AND**  
**9**

Completion, Substantial  
4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3,  
12.2, 13.7  
Compliance with Laws  
1.6.1, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 4.1.1, 9.6.4,  
10.2.2, 11.1, 11.3, 13.1, 13.4, 13.5.1, 13.5.2, 13.6,  
14.1.1, 14.2.1.3, 15.2.8, 15.4.2, 15.4.3  
Concealed or Unknown Conditions  
3.7.4, 4.2.8, 8.3.1, 10.3  
Conditions of the Contract  
1.1.1, 6.1.1, 6.1.4  
Consent, Written  
3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.8.5, 9.9.1,  
9.10.2, 9.10.3, 11.3.1, 13.2, 13.4.2, 15.4.4.2  
**Consolidation or Joinder**  
**15.4.4**  
**CONSTRUCTION BY OWNER OR BY**  
**SEPARATE CONTRACTORS**  
1.1.4, **6**  
**Construction Change Directive, Definition of**  
**7.3.1**  
**Construction Change Directives**  
1.1.1, 3.4.2, 3.12.8, 4.2.8, 7.1.1, 7.1.2, 7.1.3, **7.3**,  
9.3.1.1  
Construction Schedules, Contractor's  
3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.5.2  
**Contingent Assignment of Subcontracts**  
**5.4**, 14.2.2.2  
**Continuing Contract Performance**  
**15.1.3**  
**Contract, Definition of**  
**1.1.2**  
**CONTRACT, TERMINATION OR**  
**SUSPENSION OF THE**  
5.4.1.1, 11.3.9, **14**  
Contract Administration  
3.1.3, 4, 9.4, 9.5  
Contract Award and Execution, Conditions Relating  
to  
3.7.1, 3.10, 5.2, 6.1, 11.1.3, 11.3.6, 11.4.1  
**Contract Documents, The**  
**1.1.1**  
Contract Documents, Copies Furnished and Use of  
1.5.2, 2.2.5, 5.3  
**Contract Documents, Definition of**  
**1.1.1**  
**Contract Sum**  
3.7.4, 3.8, 5.2.3, 7.2, 7.3, 7.4, **9.1**, 9.4.2, 9.5.1.4,  
9.6.7, 9.7, 10.3.2, 11.3.1, 14.2.4, 14.3.2, 15.1.4,  
15.2.5  
**Contract Sum, Definition of**  
**9.1**  
Contract Time  
3.7.4, 3.7.5, 3.10.2, 5.2.3, 7.2.1.3, 7.3.1, 7.3.5, 7.4,  
8.1.1, 8.2.1, 8.3.1, 9.5.1, 9.7.1, 10.3.2, 12.1.1, 14.3.2,  
15.1.5.1, 15.2.5

**Contract Time, Definition of**  
**8.1.1**  
**CONTRACTOR**  
**3**  
**Contractor, Definition of**  
**3.1, 6.1.2**  
**Contractor's Construction Schedules**  
**3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.5.2**  
Contractor's Employees  
3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3,  
11.1.1, 11.3.7, 14.1, 14.2.1.1,  
**Contractor's Liability Insurance**  
**11.1**  
Contractor's Relationship with Separate Contractors  
and Owner's Forces  
3.12.5, 3.14.2, 4.2.4, 6, 11.3.7, 12.1.2, 12.2.4  
Contractor's Relationship with Subcontractors  
1.2.2, 3.3.2, 3.18.1, 3.18.2, 5, 9.6.2, 9.6.7, 9.10.2,  
11.3.1.2, 11.3.7, 11.3.8  
Contractor's Relationship with the Architect  
1.1.2, 1.5, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5.1,  
3.7.4, 3.10, 3.11, 3.12, 3.16, 3.18, 4.1.3, 4.2, 5.2,  
6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6,  
10.3, 11.3.7, 12, 13.5, 15.1.2, 15.2.1  
Contractor's Representations  
3.2.1, 3.2.2, 3.5.1, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.8.2  
Contractor's Responsibility for Those Performing the  
Work  
3.3.2, 3.18, 5.3.1, 6.1.3, 6.2, 9.5.1, 10.2.8  
Contractor's Review of Contract Documents  
3.2  
Contractor's Right to Stop the Work  
9.7  
Contractor's Right to Terminate the Contract  
14.1, 15.1.6  
Contractor's Submittals  
3.10, 3.11, 3.12.4, 4.2.7, 5.2.1, 5.2.3, 9.2, 9.3, 9.8.2,  
9.8.3, 9.9.1, 9.10.2, 9.10.3, 11.1.3, 11.4.2  
Contractor's Superintendent  
3.9, 10.2.6  
Contractor's Supervision and Construction  
Procedures  
1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4,  
7.1.3, 7.3.5, 7.3.7, 8.2, 10, 12, 14, 15.1.3  
Contractual Liability Insurance  
11.1.1.8, 11.2  
Coordination and Correlation  
1.2, 3.2.1, 3.3.1, 3.10, 3.12.6, 6.1.3, 6.2.1  
Copies Furnished of Drawings and Specifications  
1.5, 2.2.5, 3.11  
Copyrights  
1.5, **3.17**  
Correction of Work  
2.3, 2.4, 3.7.3, 9.4.2, 9.8.2, 9.8.3, 9.9.1, 12.1.2, **12.2**  
**Correlation and Intent of the Contract Documents**  
**1.2**

**Cost, Definition of**  
**7.3.7**  
Costs  
2.4.1, 3.2.4, 3.7.3, 3.8.2, 3.15.2, 5.4.2, 6.1.1, 6.2.3,  
7.3.3.3, 7.3.7, 7.3.8, 7.3.9, 9.10.2, 10.3.2, 10.3.6,  
11.3, 12.1.2, 12.2.1, 12.2.4, 13.5, 14  
**Cutting and Patching**  
**3.14, 6.2.5**  
Damage to Construction of Owner or Separate  
Contractors  
3.14.2, 6.2.4, 10.2.1.2, 10.2.5, 10.4, 11.1.1, 11.3,  
12.2.4  
Damage to the Work  
3.14.2, 9.9.1, 10.2.1.2, 10.2.5, 10.4.1, 11.3.1, 12.2.4  
Damages, Claims for  
3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.1.1,  
11.3.5, 11.3.7, 14.1.3, 14.2.4, 15.1.6  
Damages for Delay  
6.1.1, 8.3.3, 9.5.1.6, 9.7, 10.3.2  
**Date of Commencement of the Work, Definition of**  
**8.1.2**  
**Date of Substantial Completion, Definition of**  
**8.1.3**  
**Day, Definition of**  
**8.1.4**  
Decisions of the Architect  
3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 15.2, 6.3,  
7.3.7, 7.3.9, 8.1.3, 8.3.1, 9.2.1, 9.4, 9.5.1, 9.8.4, 9.9.1,  
13.5.2, 14.2.2, 14.2.4, 15.1, 15.2  
**Decisions to Withhold Certification**  
9.4.1, **9.5**, 9.7, 14.1.1.3  
Defective or Nonconforming Work, Acceptance,  
Rejection and Correction of  
2.3.1, 2.4.1, 3.5.1, 4.2.6, 6.2.5, 9.5.1, 9.5.2, 9.6.6,  
9.8.2, 9.9.3, 9.10.4, 12.2.1  
**Defective Work, Definition of**  
**3.5.1**  
Definitions  
1.1, 2.1.1, 3.1.1, 3.5.1, 3.12.1, 3.12.2, 3.12.3, 4.1.1,  
15.1.1, 5.1, 6.1.2, 7.2.1, 7.3.1, 8.1, 9.1, 9.8.1  
**Delays and Extensions of Time**  
3.2., 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4.1, **8.3**, 9.5.1, 9.7.1,  
10.3.2, 10.4.1, 14.3.2, 15.1.5, 15.2.5  
Disputes  
6.3.1, 7.3.9, 15.1, 15.2  
**Documents and Samples at the Site**  
**3.11**  
**Drawings, Definition of**  
**1.1.5**  
Drawings and Specifications, Use and Ownership of  
3.11  
Effective Date of Insurance  
8.2.2, 11.1.2  
**Emergencies**  
**10.4**, 14.1.1.2, 15.1.4



Employees, Contractor's  
3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2,  
10.3.3, 11.1.1, 11.3.7, 14.1, 14.2.1.1  
Equipment, Labor, Materials or  
1.1.3, 1.1.6, 3.4, 3.5.1, 3.8.2, 3.8.3, 3.12, 3.13.1,  
3.15.1, 4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.7, 9.3.2, 9.3.3,  
9.5.1.3, 9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2  
Execution and Progress of the Work  
1.1.3, 1.2.1, 1.2.2, 2.2.3, 2.2.5, 3.1, 3.3.1, 3.4.1, 3.5.1,  
3.7.1, 3.10.1, 3.12, 3.14, 4.2, 6.2.2, 7.1.3, 7.3.5, 8.2,  
9.5.1, 9.9.1, 10.2, 10.3, 12.2, 14.2, 14.3.1, 15.1.3  
Extensions of Time  
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3, 7.4.1, 9.5.1, 9.7.1,  
10.3.2, 10.4.1, 14.3, 15.1.5, 15.2.5  
**Failure of Payment**  
9.5.1.3, **9.7**, 9.10.2, 13.6, 14.1.1.3, 14.2.1.2  
Faulty Work  
(See Defective or Nonconforming Work)  
**Final Completion and Final Payment**  
4.2.1, 4.2.9, 9.8.2, **9.10**, 11.1.2, 11.1.3, 11.3.1, 11.3.5,  
12.3.1, 14.2.4, 14.4.3  
Financial Arrangements, Owner's  
2.2.1, 13.2.2, 14.1.1.4  
Fire and Extended Coverage Insurance  
11.3.1.1  
**GENERAL PROVISIONS**  
**1**  
**Governing Law**  
**13.1**  
Guarantees (See Warranty)  
**Hazardous Materials**  
10.2.4, **10.3**  
Identification of Subcontractors and Suppliers  
5.2.1  
**Indemnification**  
3.17.1, **3.18**, 9.10.2, 10.3.3, 10.3.5, 10.3.6, 11.3.1.2,  
11.3.7  
**Information and Services Required of the Owner**  
2.1.2, **2.2**, 3.2.2, 3.12.4, 3.12.10, 6.1.3, 6.1.4, 6.2.5,  
9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 11.4, 13.5.1,  
13.5.2, 14.1.1.4, 14.1.4, 15.1.3  
**Initial Decision**  
**15.2**  
**Initial Decision Maker, Definition of**  
1.1.8  
Initial Decision Maker, Decisions  
14.2.2, 14.2.4, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5  
Initial Decision Maker, Extent of Authority  
14.2.2, 14.2.4, 15.1.3, 15.2.1, 15.2.2, 15.2.3, 15.2.4,  
15.2.5  
**Injury or Damage to Person or Property**  
**10.2.8**, 10.4.1  
Inspections  
3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3,  
9.9.2, 9.10.1, 12.2.1, 13.5  
Instructions to Bidders  
1.1.1

Instructions to the Contractor  
3.2.4, 3.3.1, 3.8.1, 5.2.1, 7, 8.2.2, 12, 13.5.2  
**Instruments of Service, Definition of**  
**1.1.7**  
Insurance  
3.18.1, 6.1.1, 7.3.7, 9.3.2, 9.8.4, 9.9.1, 9.10.2, **11**  
**Insurance, Boiler and Machinery**  
**11.3.2**  
**Insurance, Contractor's Liability**  
**11.1**  
Insurance, Effective Date of  
8.2.2, 11.1.2  
**Insurance, Loss of Use**  
**11.3.3**  
**Insurance, Owner's Liability**  
**11.2**  
**Insurance, Property**  
10.2.5, **11.3**  
Insurance, Stored Materials  
9.3.2, 11.4.1.4  
**INSURANCE AND BONDS**  
**11**  
Insurance Companies, Consent to Partial Occupancy  
9.9.1, 11.4.1.5  
Insurance Companies, Settlement with  
11.4.10  
Intent of the Contract Documents  
1.2.1, 4.2.7, 4.2.12, 4.2.13, 7.4  
**Interest**  
**13.6**  
**Interpretation**  
1.2.3, **1.4**, 4.1.1, 5.1, 6.1.2, 15.1.1  
Interpretations, Written  
4.2.11, 4.2.12, 15.1.4  
Judgment on Final Award  
15.4.2  
**Labor and Materials, Equipment**  
1.1.3, 1.1.6, **3.4**, 3.5.1, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,  
4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.7, 9.3.2, 9.3.3, 9.5.1.3,  
9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2  
Labor Disputes  
8.3.1  
Laws and Regulations  
1.5, 3.2.3, 3.6, 3.7, 3.12.10, 3.13.1, 4.1.1, 9.6.4, 9.9.1,  
10.2.2, 11.1.1, 11.3, 13.1.1, 13.4, 13.5.1, 13.5.2,  
13.6.1, 14, 15.2.8, 15.4  
Liens  
2.1.2, 9.3.3, 9.10.2, 9.10.4, 15.2.8  
Limitations, Statutes of  
12.2.5, 13.7, 15.4.1.1  
Limitations of Liability  
2.3.1, 3.2.2, 3.5.1, 3.12.10, 3.17.1, 3.18.1, 4.2.6,  
4.2.7, 4.2.12, 6.2.2, 9.4.2, 9.6.4, 9.6.7, 10.2.5, 10.3.3,  
11.1.2, 11.2, 11.3.7, 12.2.5, 13.4.2

Limitations of Time  
2.1.2, 2.2, 2.4, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2.7,  
5.2, 5.3.1, 5.4.1, 6.2.4, 7.3, 7.4, 8.2, 9.2.1, 9.3.1,  
9.3.3, 9.4.1, 9.5, 9.6, 9.7.1, 9.8, 9.9, 9.10, 11.1.3,  
11.3.1.5, 11.3.6, 11.3.10, 12.2, 13.5, 13.7, 14, 15

## **Loss of Use Insurance**

### **11.3.3**

#### Material Suppliers

1.5, 3.12.1, 4.2.4, 4.2.6, 5.2.1, 9.3, 9.4.2, 9.6, 9.10.5

## **Materials, Hazardous**

### **10.2.4, 10.3**

#### Materials, Labor, Equipment and

1.1.3, 1.1.6, 1.5.1, 3.4.1, 3.5.1, 3.8.2, 3.8.3, 3.12,  
3.13.1, 3.15.1, 4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.7, 9.3.2,  
9.3.3, 9.5.1.3, 9.10.2, 10.2.1.2, 10.2.4, 14.2.1.1,  
14.2.1.2

#### Means, Methods, Techniques, Sequences and Procedures of Construction

3.3.1, 3.12.10, 4.2.2, 4.2.7, 9.4.2

#### Mechanic's Lien

2.1.2, 15.2.8

## **Mediation**

8.3.1, 10.3.5, 10.3.6, 15.2.1, 15.2.5, 15.2.6, **15.3**,  
15.4.1

## **Minor Changes in the Work**

1.1.1, 3.12.8, 4.2.8, 7.1, **7.4**

## **MISCELLANEOUS PROVISIONS**

### **13**

#### **Modifications**, Definition of

##### **1.1.1**

#### Modifications to the Contract

1.1.1, 1.1.2, 3.11, 4.1.2, 4.2.1, 5.2.3, 7, 8.3.1, 9.7.1,  
10.3.2, 11.3.1

#### **Mutual Responsibility**

##### **6.2**

#### **Nonconforming Work, Acceptance of**

9.6.6, 9.9.3, **12.3**

Nonconforming Work, Rejection and Correction of  
2.3.1, 2.4.1, 3.5.1, 4.2.6, 6.2.4, 9.5.1, 9.8.2, 9.9.3,  
9.10.4, 12.2.1

#### Notice

2.2.1, 2.3.1, 2.4.1, 3.2.4, 3.3.1, 3.7.2, 3.12.9, 5.2.1,  
9.7.1, 9.10, 10.2.2, 11.1.3, 11.4.6, 12.2.2.1, 13.3,  
13.5.1, 13.5.2, 14.1, 14.2, 15.2.8, 15.4.1

#### **Notice, Written**

2.3.1, 2.4.1, 3.3.1, 3.9.2, 3.12.9, 3.12.10, 5.2.1, 9.7.1,  
9.10, 10.2.2, 10.3, 11.1.3, 11.3.6, 12.2.2.1, **13.3**, 14,  
15.2.8, 15.4.1

#### **Notice of Claims**

3.7.4, 4.5, 10.2.8, **15.1.2**, 15.4

#### Notice of Testing and Inspections

13.5.1, 13.5.2

#### Observations, Contractor's

3.2, 3.7.4

#### Occupancy

2.2.2, 9.6.6, 9.8, 11.3.1.5

#### Orders, Written

1.1.1, 2.3, 3.9.2, 7, 8.2.2, 11.3.9, 12.1, 12.2.2.1,  
13.5.2, 14.3.1

## **OWNER**

### **2**

#### **Owner**, Definition of

##### **2.1.1**

#### **Owner, Information and Services Required of the**

2.1.2, **2.2**, 3.2.2, 3.12.10, 6.1.3, 6.1.4, 6.2.5, 9.3.2,  
9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 11.3, 13.5.1,  
13.5.2, 14.1.1.4, 14.1.4, 15.1.3

#### Owner's Authority

1.5, 2.1.1, 2.3.1, 2.4.1, 3.4.2, 3.8.1, 3.12.10, 3.14.2,  
4.1.2, 4.1.3, 4.2.4, 4.2.9, 5.2.1, 5.2.4, 5.4.1, 6.1, 6.3.1,  
7.2.1, 7.3.1, 8.2.2, 8.3.1, 9.3.1, 9.3.2, 9.5.1, 9.6.4,  
9.9.1, 9.10.2, 10.3.2, 11.1.3, 11.3.3, 11.3.10, 12.2.2,  
12.3.1, 13.2.2, 14.3, 14.4, 15.2.7

#### Owner's Financial Capability

2.2.1, 13.2.2, 14.1.1.4

#### **Owner's Liability Insurance**

##### **11.2**

#### **Owner's Loss of Use Insurance**

##### **11.3.3**

#### Owner's Relationship with Subcontractors

1.1.2, 5.2, 5.3, 5.4, 9.6.4, 9.10.2, 14.2.2

#### **Owner's Right to Carry Out the Work**

**2.4**, 14.2.2

#### **Owner's Right to Clean Up**

##### **6.3**

#### **Owner's Right to Perform Construction and to Award Separate Contracts**

##### **6.1**

#### **Owner's Right to Stop the Work**

##### **2.3**

#### Owner's Right to Suspend the Work

14.3

#### Owner's Right to Terminate the Contract

14.2

#### **Ownership and Use of Drawings, Specifications and Other Instruments of Service**

1.1.1, 1.1.6, 1.1.7, **1.5**, 2.2.5, 3.2.2, 3.11.1, 3.17.1,  
4.2.12, 5.3.1

#### **Partial Occupancy or Use**

9.6.6, **9.9**, 11.3.1.5

#### **Patching, Cutting and**

**3.14**, 6.2.5

#### Patents

3.17

#### **Payment, Applications for**

4.2.5, 7.3.9, 9.2.1, **9.3**, 9.4, 9.5, 9.6.3, 9.7.1, 9.8.5,  
9.10.1, 14.2.3, 14.2.4, 14.4.3

#### **Payment, Certificates for**

4.2.5, 4.2.9, 9.3.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7.1, 9.10.1,  
9.10.3, 13.7, 14.1.1.3, 14.2.4

#### **Payment, Failure of**

9.5.1.3, **9.7**, 9.10.2, 13.6, 14.1.1.3, 14.2.1.2

Payment, Final  
4.2.1, 4.2.9, 9.8.2, 9.10, 11.1.2, 11.1.3, 11.4.1, 11.4.5,  
12.3.1, 13.7, 14.2.4, 14.4.3  
**Payment Bond, Performance Bond and**  
7.3.7.4, 9.6.7, 9.10.3, 11.4.9, **11.4**  
**Payments, Progress**  
9.3, **9.6**, 9.8.5, 9.10.3, 13.6, 14.2.3, 15.1.3  
**PAYMENTS AND COMPLETION**  
**9**  
Payments to Subcontractors  
5.4.2, 9.5.1.3, 9.6.2, 9.6.3, 9.6.4, 9.6.7, 11.4.8,  
14.2.1.2  
PCB  
10.3.1  
**Performance Bond and Payment Bond**  
7.3.7.4, 9.6.7, 9.10.3, 11.4.9, **11.4**  
**Permits, Fees, Notices and Compliance with Laws**  
2.2.2, **3.7**, 3.13, 7.3.7.4, 10.2.2  
**PERSONS AND PROPERTY, PROTECTION**  
**OF**  
**10**  
Polychlorinated Biphenyl  
10.3.1  
**Product Data, Definition of**  
**3.12.2**  
**Product Data and Samples, Shop Drawings**  
3.11, **3.12**, 4.2.7  
**Progress and Completion**  
4.2.2, **8.2**, 9.8, 9.9.1, 14.1.4, 15.1.3  
**Progress Payments**  
9.3, **9.6**, 9.8.5, 9.10.3, 13.6, 14.2.3, 15.1.3  
**Project, Definition of the**  
**1.1.4**  
Project Representatives  
4.2.10  
**Property Insurance**  
10.2.5, **11.3**  
**PROTECTION OF PERSONS AND PROPERTY**  
**10**  
Regulations and Laws  
1.5, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 4.1.1, 9.6.4, 9.9.1,  
10.2.2, 11.1, 11.4, 13.1, 13.4, 13.5.1, 13.5.2, 13.6, 14,  
15.2.8, 15.4  
Rejection of Work  
3.5.1, 4.2.6, 12.2.1  
Releases and Waivers of Liens  
9.10.2  
Representations  
3.2.1, 3.5.1, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.4.2, 9.5.1,  
9.8.2, 9.10.1  
Representatives  
2.1.1, 3.1.1, 3.9, 4.1.1, 4.2.1, 4.2.2, 4.2.10, 5.1.1,  
5.1.2, 13.2.1  
Responsibility for Those Performing the Work  
3.3.2, 3.18, 4.2.3, 5.3.1, 6.1.3, 6.2, 6.3, 9.5.1, 10  
Retainage  
9.3.1, 9.6.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3

**Review of Contract Documents and Field**  
**Conditions by Contractor**  
**3.2**, 3.12.7, 6.1.3  
Review of Contractor's Submittals by Owner and  
Architect  
3.10.1, 3.10.2, 3.11, 3.12, 4.2, 5.2, 6.1.3, 9.2, 9.8.2  
Review of Shop Drawings, Product Data and  
Samples by Contractor  
3.12  
**Rights and Remedies**  
1.1.2, 2.3, 2.4, 3.5.1, 3.7.4, 3.15.2, 4.2.6, 4.5, 5.3, 5.4,  
6.1, 6.3, 7.3.1, 8.3, 9.5.1, 9.7, 10.2.5, 10.3, 12.2.2,  
12.2.4, **13.4**, 14, 15.4  
**Royalties, Patents and Copyrights**  
**3.17**  
Rules and Notices for Arbitration  
15.4.1  
**Safety of Persons and Property**  
**10.2**, 10.4  
**Safety Precautions and Programs**  
3.3.1, 4.2.2, 4.2.7, 5.3.1, **10.1**, 10.2, 10.4  
**Samples, Definition of**  
**3.12.3**  
**Samples, Shop Drawings, Product Data and**  
3.11, **3.12**, 4.2.7  
**Samples at the Site, Documents and**  
**3.11**  
**Schedule of Values**  
**9.2**, 9.3.1  
Schedules, Construction  
3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.5.2  
Separate Contracts and Contractors  
1.1.4, 3.12.5, 3.14.2, 4.2.4, 4.2.7, 6, 8.3.1, 11.4.7,  
12.1.2  
**Shop Drawings, Definition of**  
**3.12.1**  
**Shop Drawings, Product Data and Samples**  
3.11, **3.12**, 4.2.7  
**Site, Use of**  
**3.13**, 6.1.1, 6.2.1  
Site Inspections  
3.2.2, 3.3.3, 3.7.1, 3.7.4, 4.2, 9.4.2, 9.10.1, 13.5  
Site Visits, Architect's  
3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.5  
Special Inspections and Testing  
4.2.6, 12.2.1, 13.5  
**Specifications, Definition of the**  
**1.1.6**  
**Specifications, The**  
1.1.1, **1.1.6**, 1.2.2, 1.5, 3.11, 3.12.10, 3.17, 4.2.14  
Statute of Limitations  
13.7, 15.4.1.1  
Stopping the Work  
2.3, 9.7, 10.3, 14.1  
Stored Materials  
6.2.1, 9.3.2, 10.2.1.2, 10.2.4, 11.4.1.4

**Subcontractor, Definition of**

**5.1.1**

**SUBCONTRACTORS**

**5**

Subcontractors, Work by

1.2.2, 3.3.2, 3.12.1, 4.2.3, 5.2.3, 5.3, 5.4, 9.3.1.2, 9.6.7

**Subcontractual Relations**

**5.3**, 5.4, 9.3.1.2, 9.6, 9.10, 10.2.1, 11.4.7, 11.4.8, 14.1, 14.2.1

Submittals

3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 7.3.7, 9.2, 9.3, 9.8, 9.9.1, 9.10.2, 9.10.3, 11.1.3

Submittal Schedule

3.10.2, 3.12.5, 4.2.7

**Subrogation, Waivers of**

6.1.1, 11.4.5, **11.3.7**

**Substantial Completion**

4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, **9.8**, 9.9.1, 9.10.3, 12.2, 13.7

**Substantial Completion, Definition of**

**9.8.1**

Substitution of Subcontractors

5.2.3, 5.2.4

Substitution of Architect

4.1.3

Substitutions of Materials

3.4.2, 3.5.1, 7.3.8

**Sub-subcontractor, Definition of**

**5.1.2**

Subsurface Conditions

3.7.4

**Successors and Assigns**

**13.2**

**Superintendent**

**3.9**, 10.2.6

**Supervision and Construction Procedures**

1.2.2, **3.3**, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3, 7.3.7, 8.2, 8.3.1, 9.4.2, 10, 12, 14, 15.1.3

Surety

5.4.1.2, 9.8.5, 9.10.2, 9.10.3, 14.2.2, 15.2.7

Surety, Consent of

9.10.2, 9.10.3

Surveys

2.2.3

**Suspension by the Owner for Convenience**

**14.3**

Suspension of the Work

5.4.2, 14.3

Suspension or Termination of the Contract

5.4.1.1, 11.4.9, 14

**Taxes**

3.6, 3.8.2.1, 7.3.7.4

**Termination by the Contractor**

**14.1**, 15.1.6

**Termination by the Owner for Cause**

5.4.1.1, **14.2**, 15.1.6

**Termination by the Owner for Convenience**

**14.4**

Termination of the Architect

4.1.3

Termination of the Contractor

14.2.2

**TERMINATION OR SUSPENSION OF THE CONTRACT**

**14**

**Tests and Inspections**

3.1.3, 3.3.3, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 10.3.2, 11.4.1.1, 12.2.1, **13.5**

**TIME**

**8**

**Time, Delays and Extensions of**

3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4.1, **8.3**, 9.5.1, 9.7.1, 10.3.2, 10.4.1, 14.3.2, 15.1.5, 15.2.5

Time Limits

2.1.2, 2.2, 2.4, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2, 4.4, 4.5, 5.2, 5.3, 5.4, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3, 9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 11.1.3, 11.4.1.5, 11.4.6, 11.4.10, 12.2, 13.5, 13.7, 14, 15.1.2, 15.4

**Time Limits on Claims**

3.7.4, 10.2.8, **13.7**, 15.1.2

Title to Work

9.3.2, 9.3.3

**Transmission of Data in Digital Form**

**1.6**

**UNCOVERING AND CORRECTION OF WORK**

**12**

**Uncovering of Work**

**12.1**

Unforeseen Conditions, Concealed or Unknown

3.7.4, 8.3.1, 10.3

Unit Prices

7.3.3.2, 7.3.4

Use of Documents

1.1.1, 1.5, 2.2.5, 3.12.6, 5.3

**Use of Site**

**3.13**, 6.1.1, 6.2.1

**Values, Schedule of**

**9.2**, 9.3.1

Waiver of Claims by the Architect

13.4.2

Waiver of Claims by the Contractor

9.10.5, 11.4.7, 13.4.2, 15.1.6

Waiver of Claims by the Owner

9.9.3, 9.10.3, 9.10.4, 11.4.3, 11.4.5, 11.4.7, 12.2.2.1, 13.4.2, 14.2.4, 15.1.6

Waiver of Consequential Damages

14.2.4, 15.1.6

Waiver of Liens

9.10.2, 9.10.4

**Waivers of Subrogation**

6.1.1, 11.4.5, **11.3.7**

**Warranty**

3.5, 4.2.9, 9.3.3, 9.8.4, 9.9.1, 9.10.4, 12.2.2, 13.7.1

**Weather Delays**

15.1.5.2

**Work, Definition of**

**1.1.3**

**Written Consent**

1.5.2, 3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3, 11.4.1, 13.2, 13.4.2, 15.4.4.2

**Written Interpretations**

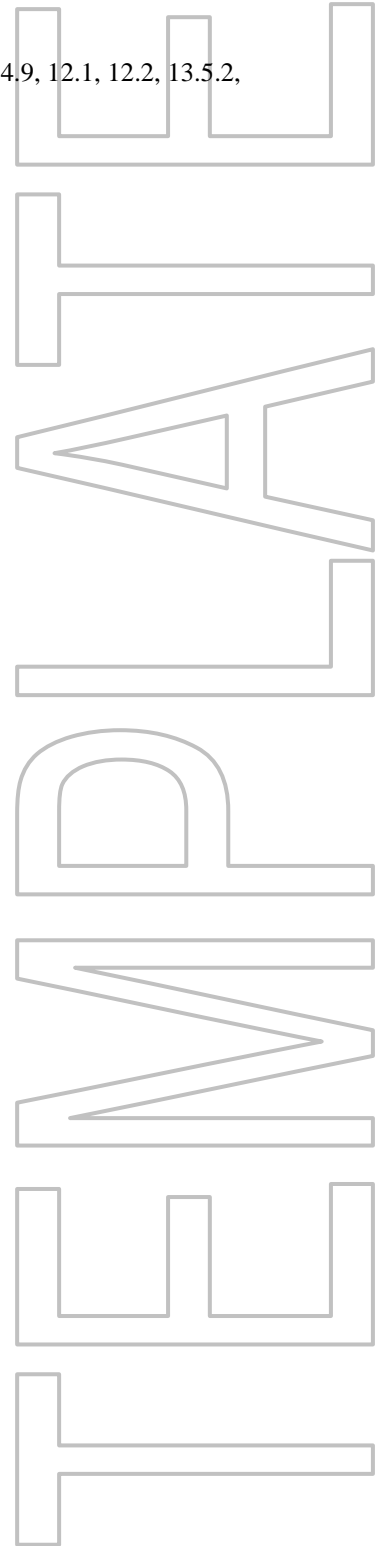
4.2.11, 4.2.12

**Written Notice**

2.3, 2.4, 3.3.1, 3.9, 3.12.9, 3.12.10, 5.2.1, 8.2.2, 9.7, 9.10, 10.2.2, 10.3, 11.1.3, 11.4.6, 12.2.2, 12.2.4, **13.3**, 14, 15.4.1

**Written Orders**

1.1.1, 2.3, 3.9, 7, 8.2.2, 11.4.9, 12.1, 12.2, 13.5.2, 14.3.1, 15.1.2



## ARTICLE 1 GENERAL PROVISIONS

### § 1.1 BASIC DEFINITIONS

#### § 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents consist of these General Conditions, as amended, the AIA A101-2007, as amended, Drawings, Specifications, Bid Clarifications and/or Addenda issued prior to execution of this Contract, other documents listed in this Contract and Modifications issued after execution of this Contract, all of which form the Contract, and are as fully a part of the Contract as if attached to this Contract or repeated herein. An enumeration of the Contract Documents, other than a Modification, appears in Article 9 of the AIA A101-2007. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, or (3) a written order for a minor change in the Work issued by the Architect.

§ 1.1.1.1 Whenever the words, “directed”, “required”, “ordered”, “designated”, “prescribed”, or words of like import are used, it shall be understood that the direction”, “requirement”, “order”, “designation”, or “prescription” of the Owner Representative is intended and similarly the words “approved”, “acceptable”, “satisfactory”, or words of like import shall mean, “approved by”, or “acceptable to”, or “satisfactory to” the Owner Representative unless otherwise expressly state. The “Owner Representative” shall be as defined in the AIA A201-2007 Section 2.1.1.1.

§ 1.1.1.2 Where “as shown”, “as indicated”, “as detailed”, or words of similar import are used, it shall be understood that the reference is made to the Contract Documents accompanying this Contract unless stated otherwise. The word “provided” as used herein shall be understood to mean “provide complete in place” that is, “furnished and installed”.

§ 1.1.1.3 All personal pronouns used in this Contract, whether used in the masculine, feminine, or neuter gender, shall include all other genders; and the singular shall include the plural and vice versa. Title of Articles and Sections are for convenience only, and neither limit or amplify the provisions of this Contract in itself. The use herein of the word “including”, when following any general statement, term, or matter, shall not be construed to limit such statement, term, or matter to the specific items or matters set forth immediately following such word or to similar items or matters, whether or not non-limiting language (such words as “without limitation”, or “but not limited to”, or words of similar import) is used with reference thereto, but rather shall be deemed to refer to all other items or matters that could reasonably fall within the broadest possible scope of such general statement, term or matter.

#### § 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect’s consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect’s consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect’s duties.

#### § 1.1.3 THE WORK

The term “Work” means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor’s obligations. The Work may constitute the whole or a part of the Project, whether on or off the site of the Project, and including all labor, materials, equipment and services provided or to be provided by subcontractors, sub-subcontractors, material suppliers or any other entity for whom the Contractor is responsible under or pursuant to the Contract Documents.

#### § 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

#### § 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.



### § 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

### § 1.1.7 THE PROJECT MANUAL

The Project Manual is a volume assembled for the Work, which may include the bidding requirements, sample forms, Conditions of the Contract and Specifications.

### § 1.1.8 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

### § 1.1.9 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the AIA A101-2007 Contract Section 6.1 to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Contract under Section 14.2.2.

### § 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

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

§ 1.2.1.1 In the event of inconsistencies within or between parts of the Contract Documents or between the Contract documents and applicable standards, codes, and ordinances, the Contractor shall: 1) provide the better quality or greater quantity of work, or 2) comply with the more stringent requirement; either or both in accordance with the Owner Representative's interpretation. The terms and conditions of this Section 1.2.1 however, shall not relieve the Contractor of any of the obligations set forth in Sections 3.2 and 3.7.

§ 1.2.1.1.1 Before ordering any materials or doing any Work, the Contractor and each Subcontractor shall verify measurements at the project site and shall be responsible for the correctness of such measurements. Any difference which may be found shall be submitted to the Architect for resolution before proceeding with the Work.

§ 1.2.1.1.2 If a minor change in the Work is found necessary due to actual field conditions, the Contractor shall submit detailed drawings of such departure for approval by the Architect before making the change.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

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

§ 1.2.4 In performing its obligations under this contract, the Contractor shall comply with all applicable statutes, laws, ordinances, regulations, codes, rules or orders of, or issued by any governmental body having jurisdiction over the Work, location of the Work, or the Contract.

§ 1.2.5 If any item, material, product or equipment is found to be specified in more than one Division Section or Article of the Specifications, the Contractor shall be responsible for determining which subcontractor or supplier shall provide the item.

§ 1.2.5.1 When applied to materials and equipment, the words "furnish", "install", and "provide" shall mean the following:

The word “provide” shall mean to furnish, pay for, deliver, install, adjust, clean and otherwise make materials and equipment fit for their intended use, as specified in Section 3.5 of the General Conditions.

The word “furnish” shall mean to secure, pay for, deliver to site, unload, uncrate and store materials.

The word “install” shall mean to place in position, incorporate in the work, adjust, clean, make fit for use, and perform all services specified in General Conditions Section 3.5 except those included under the definition of the word “furnish” above.

The phrase “furnish and install” shall be equivalent to the word “provide”.

§ 1.2.5.2 The phrase “match existing” shall mean the following:

Where Contract Documents call for exact matching, match existing work exactly in quality and appearance.

### § 1.3 CAPITALIZATION

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

### § 1.4 INTERPRETATION

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

### § 1.5 EXECUTION OF CONTRACT

Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

### § 1.6 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.6.1 For the purposes of this Contract only, the Drawings, Specifications and other documents, including those in electronic form, prepared by the Architect and the Architect's consultants are Instruments of Service through which the Work to be executed by the Contractor is described. The Contractor may retain one record set. Neither the Contractor nor any Subcontractor, Sub-subcontractor or material or equipment supplier shall own or claim a copyright in the Drawings, Specifications and other documents prepared by the Architect or the Architect's consultants, and unless otherwise indicated the Architect and the Architect's consultants shall be deemed the authors. The Owner will retain all common law, statutory and other reserved rights, including copyrights unless the Contract between the Owner and Architect provides otherwise. All copies of Instruments of Service, except the Contractor's record set, shall be returned or suitably accounted for to the Architect, on request, upon completion of the Work. The Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants, and copies thereof furnished to the Contractor, are for use solely with respect to this Project. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 1.6.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants appropriate to and for use in the execution of their Work under the Contract Documents. All copies made under this authorization shall bear the statutory copyright notice, if any, shown on the Drawings, Specifications and other documents. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' rights.

### § 1.7 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Contract or the Contract Documents.



## § 1.8 PROVISIONS REQUIRED BY LAW DEEMED INSERTED

§ 1.8.1 Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, the Contract shall forthwith be physically amended to make such insertion.

## ARTICLE 2 OWNER

### § 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Contract and is referred to throughout the Contract Documents as if singular in number. Except as otherwise provided in Section 4.2.1, the Architect does not have any authority to act on behalf of the Owner. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.1.1 A staff member of the Owner shall be designated as the "Owner Representative". All contact and communication with the Owner shall be through the Owner Representative, or his or her designee. The Owner, on certain projects, may also retain the services of an outside Construction Administrator, who may be authorized to exercise certain contractual powers of the Owner Representative and/or the Architect. Should this occur, the Contractor will be advised in writing, as appropriate, of the scope and nature of this Construction Administrator's role pursuant to these Contract Documents.

§ 2.1.2 NOT USED.

### § 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 NOT USED.

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

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall exercise proper precautions relating to the safe performance of the Work. Contractor shall review all such information and notify the Owner of any inaccuracies within twenty (20) days of its receipt.

§ 2.2.3.1 Data concerning site, size, access to site, staging and storing, present obstructions on or near the site, conditions of existing adjacent structures, locations and depths of sewers, conduits or pipes, gas lines, position of sidewalks, curbs and pavements, and other data concerning site conditions, has been obtained from sources Owner believes reliable. Accuracy of such data, however, is not guaranteed and is furnished solely for accommodation of Contractor. Use of such data is made at Contractor's sole risk and expense.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 The Contractor shall purchase such copies of Drawings and Project Manuals as are reasonably necessary for execution of the Work.

### § 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent

required by Section 6.1.3. This right shall be in addition to and not in restriction or derogation of the Owner's rights under Article 14 hereof.

#### § 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, after such seven (7) day period give the Contractor a second written notice to correct such deficiencies within a three (3) day period. If the Contractor within such three-day period after receipt of such second notice fails to commence and continue to correct any deficiencies, the Owner may, without prejudice to other remedies, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

#### §2.5 EXTENT OF OWNER RIGHTS

§2.5.1 The rights stated in Article 2 and elsewhere in the Contract Documents are cumulative and not in limitation of any rights of the Owner (1) granted in the Contract Documents, (2) at law or (3) in equity.

§2.5.2 In no event shall the Owner have control over, charge of, or any responsibility for construction means, methods, techniques, sequences or procedures for safety precautions and programs in connection with the Work, notwithstanding any of the rights and authority granted the Owner in the Contract Documents.

### ARTICLE 3 CONTRACTOR

#### § 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Contract and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative. The Contractor shall not replace the Contractor's representative without the prior written consent of the Owner.

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

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

§ 3.1.4 The Contractor represents and warrants the following to the Owner (in addition to the other representations and warranties contained in the Contract Documents) as an inducement to the Owner to execute the Contract Documents, which representations and warranties shall survive the execution and delivery of the Contract Documents and the final completion of the Work;

- (a) That it is financially solvent, able to pay its debts as they mature and possesses sufficient working capital to complete the Work and perform its obligations under the Contract Documents;
- (b) That it, through its Subcontractors or otherwise, is able to furnish the plant, tools, materials, supplies, equipment and labor required to complete the Work and perform its obligations hereunder and has sufficient experience and competence to do so;
- (c) That it is authorized to do business in the State where the Project is located and properly licensed by all necessary governmental and public and quasi-public authorities having jurisdiction over it and over the Work and the site of the Project;
- (d) That its execution of the Contract Documents and its performance thereof have been duly authorized by all necessary corporate action; and
- (e) That its duly authorized representative has visited the site of the Work, familiarized himself with the local conditions under which the Work is to be performed and correlated his observations with the requirements of the Contract Documents.

## § 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor and all Subcontractor tiers have visited the site, become familiar with all existing conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 The Contractor and all Subcontractors shall visit the Project site and become acquainted with all existing conditions and conduct all tests, examinations or inspections including, but not necessarily limited to any subsurface investigations they deem necessary or as required by law, at their sole expense, to satisfy themselves as to existing conditions on the site, including sub-surface conditions. No such tests, examinations or inspections shall be conducted without the Owner's prior written approval and the Owner shall approve of any engineer or consultant engaged to perform such test, examination or inspection.

§ 3.2.3 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect and Owner Representative any errors, inconsistencies or omissions discovered or which should have been discovered by or made known to the Contractor as a request for information in such form as the Architect and Owner Representative may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents. After reporting to the Architect any error, inconsistency, or omission which the Contractor may discover in the Contract Documents, the Contractor is not to proceed with any work so affected without the Architect's written response and or clarifications and, if required, Owner approval of Contract adjustments.

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

§ 3.2.5 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities unless the Contractor recognized, or should have recognized, such error, inconsistency, omission or difference and knowingly failed to report it to the Architect and Owner Representative immediately.

§ 3.2.6 No compensation will be allowed by reason of any difficulties which the Contractor could have discovered or reasonably anticipated, prior to execution of the Contract by visiting the project site and observing existing conditions and/or comparing these to the Contract Documents at the time of shop drawings and/or submittals.

## § 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. The Contractor shall schedule and perform the Work so as not to interfere with any other related work being performed by the Owner in or about the Project site. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences

or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

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

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

§ 3.3.4 The Contractor shall send its qualified representative to periodic progress meetings held at such time and at such place as Architect or the Owner shall designate in accordance with the Contract Documents.

#### § 3.4 LABOR AND MATERIALS

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

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.2.1 In connection with any requests for substitutions, the Contractor:

- .1 represents that the Contractor and Subcontractor or any applicable tier have personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
- .2 represents that the Contractor and proposed manufacturer will provide the same or superior warranty coverage for the substitution that the Contractor would for that specified;
- .3 certifies that the cost data presented is complete and includes all related costs under this Contract except the Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent;
- .4 shall coordinate the installation of the accepted substitution, making such changes as may be required for the Work to be complete in all respects;
- .5 shall make requests for substitutions within fifteen (15) days after Contract award or at the preconstruction meeting; and
- .6 shall reimburse and compensate the Owner for any costs incurred in connection with, and/or the value of, any services performed by the Architect and/or the Owner Representative associated with addressing the request for substitution.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.4.3.1 The Contractor shall neither permit nor suffer the use of offensive language on or about the Work embraced in this Contract.

§ 3.4.3.2 The Contractor shall neither permit nor suffer lewd conduct on or about the Work embraced in this Contract.

§ 3.4.3.3 All of Owner's buildings are smoke-free buildings. Additionally, the Contractor shall not permit outdoor smoking, where it creates a hazard, nor the introduction or use of drugs, spirituous or intoxicating liquors, on or about the Owner's property.

§ 3.4.3.4 The Contractor shall be fully responsible to the Owner for the acts of his Subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts of persons directly employed by him.

§ 3.4.3.5 The Contractor shall familiarize himself and act in compliance with the current "President's Policy on Harassment" including its provisions prohibiting sexual harassment.

§ 3.4.3.6 The Contractor is hereby specifically cautioned that unless specifically authorized in writing by the Owner's Interim Executive Vice President for Administration and Chief Financial Officer or in the case of a University of Connecticut Health Center project, the Chief Administrative Officer, on a case by case basis, the Contractor shall have no right to use and shall not use, in any manner, the name of the Owner, its officials or employees, or the Seal of the Owner: (a) in any advertising, publicity, promotion; nor (b) to express or to imply any endorsement of Contractor's work product or services.

§ 3.4.4 Directions, specifications and recommendations by manufacturers for installation, handling, storing, adjustment, and operation of their materials or equipment shall be complied with, but the Contractor shall nonetheless have the responsibility of determining whether such directions, specifications, and recommendations may safely and suitably be employed in the Work, and of notifying the Architect in advance in writing of any deviation or modification necessary for installation safety or proper operation of the item.

### § 3.5 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

### § 3.6 TAXES

The Owner is a tax-exempt institution. The Contractor shall be familiar with the current regulations of the Department of Revenue Service. The tax on materials or supplies exempted by such regulations shall not be included as part of the Contract Sum, or any Application for Payment, or request for Change Order or other compensation. A Sales Tax Certificate is available from the Owner's Purchasing Department upon written request.

### § 3.7 PERMITS, FEES, NOTICES, AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 If any governmental body having jurisdiction over the Work requires licenses or registrations for the performance of the Work, or any part thereof, the Contractor shall hold such valid licenses or registrations as may be required by law to prosecute the Work to completion. If any part of the Work for which such a license or registration is required to be performed by Subcontractors of any tier, the Contractor shall ensure that any such



Subcontractor holds such valid licenses or registrations as may be required by law to prosecute said Work to completion.

**§ 3.7.5 Concealed or Unknown Conditions.** See Section 15.1.8.

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

### **§ 3.8 ALLOWANCES**

**§ 3.8.1** The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

**§ 3.8.2** Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances, except when installation is specified as part of the allowance in Division 1 Specifications; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2, except when installation is specified as part of the allowance in the General Requirements (Division 1 of the Specifications).

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

### **§ 3.9 SUPERINTENDENT AND PROJECT MANAGER**

**§ 3.9.1** The Contractor shall employ a competent full time superintendent(s) and necessary assistants who shall be in attendance at the Project site during performance of the Work for the duration of the entire Project. The superintendent shall be satisfactory to the Owner and the Contractor shall not replace the superintendent without the prior written consent of the Owner. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.

**§ 3.9.2** If not already identified as part of the Owner's pre-qualification process, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner's Representative and Architect the name, qualifications and references of the proposed superintendent(s).

**§ 3.9.3** The superintendent(s) shall be satisfactory to the Owner and the Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. If for any reason the superintendent(s) is unsatisfactory, upon request of Owner, other qualified representatives shall be substituted. The Contractor shall not change the superintendent without the Owner's written consent, which shall not unreasonably be withheld or delayed.

**§ 3.9.4** The Contractor shall employ a competent project manager and necessary assistants who shall be in attendance at the Project site during performance of the Work for the duration of the entire Project. The project manager shall be satisfactory to the Owner and the Contractor shall not replace the project manager without the prior written consent of the Owner. The project manager shall represent the Contractor, and communications given to the project manager shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.

§ 3.9.5 If not already identified as part of the Owner's pre-qualification process, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name, qualifications and references of the proposed project manager.

§ 3.9.6 The project manager shall be satisfactory to the Owner and the Contractor shall not employ a proposed project manager to whom the Owner or Architect has made reasonable and timely objection. If for any reason the project manager is unsatisfactory, upon request of Owner, other qualified representatives shall be substituted. The Contractor shall not replace the project manager without the prior written consent of the Owner.

§ 3.9.7 Additional key personnel may be required for this project. The Contractor shall provide additional personnel as required to ensure proper project coordination.

### § 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, within ten (10) days of the date reflected on the Letter of Intent to Award, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall be in such format, and contain such information as the Owner may request or outlined in Division 1 of the Specifications. The schedule shall not exceed time limits current under the Contract Documents, shall, with the prior review and approval of the Owner and Architect, be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

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

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

### § 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Bid Clarifications and/or Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.11.1.1 In addition, the Contractor shall indicate on the drawings, as best as possible, all new and existing pipe and conduit runs which are concealed in the floor slabs, walls, ceilings, etc. The Contractor shall indicate on the drawing the electrical distribution panel and circuit number supplying each item installed or reconnected, with diagrammatic lines showing sequence of connections. All changes shall be identified and circled on the Architect's and Engineer's drawings at the time they occur for each such field change.

### § 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

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

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

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

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

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

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

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect and the Owner Representative in writing of such deviation at the time of submittal and (1) the Owner Representative has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

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

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.



§ 3.12.11 See Specifications for additional information on Shop Drawings.

### § 3.13 USE OF SITE

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

§ 3.13.2 Nothing contained in the Contract Documents shall be interpreted as giving the Contractor exclusive use of the premises where the Work is to be performed.

§ 3.13.3 The Work in this Contract should not interfere with normal, continuous and safe operation of the buildings and site. If interference appears possible because of new connections to existing work or other reasons, the Work involved must be done at a time and in a manner approved by the Owner Representative as a part of the Contract.

§ 3.13.4 The Contractor shall comply with the following procedures when working in occupied areas including classrooms, hallways, and office spaces:

§ 3.13.4.1 Notification: The Contractor shall notify the Owner Representative and the Building Safety Committee Representative two (2) days prior to commencing work in occupied office, classroom and other areas. This notification shall include detailed description of proposed work.

§ 3.13.4.2 Overhead Work: There shall be no overhead work, (e.g. demolition, HVAC ductwork, and/or electrical) performed directly over occupied spaces.

§ 3.13.5 The Contractor shall produce a site mobilization plan for the Owner Representative's review and approval before beginning operations on site. This document shall be updated and submitted monthly. No deviations will be allowed without the prior approval of the Owner.

### § 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

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

§ 3.14.3 Written permission shall be obtained from the Architect/Engineer before cutting beams, arches, lintels or other structural members.

§ 3.14.4 See Specifications for additional information on Cutting and Patching.

### § 3.15 CLEANING UP

§ 3.15.1 The Contractor shall 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, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials and shall clean and/or remove all stains, spots, marks, blemishes, foreign matter and dirt from surfaces of the Work and from other surfaces not a part of the Work but where such conditions resulted from the Contractor's operations from and about the Project.

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

### § 3.16 ACCESS TO WORK

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

### § 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect. In the event of legal action arising out of such infringement for which the Contractor is responsible and which action has the effect of stopping the Work, the Owner may require the Contractor to substitute other products of like kind as will make it possible to pursue and complete the Work. Costs and expenses caused thereby shall be borne by the Contractor.

### § 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall defend, indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the willful, wanton or negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 3.18. Nothing in this Section shall be construed as obligating the Contractor to indemnify or hold harmless any of the parties indemnified hereunder against liability for damage arising out of bodily injury to persons or damage to property caused by or resulting from the sole negligence of any such indemnified party, or such party's agents or employees.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

§ 3.18.3 The Contractor further agrees to obtain and maintain at its expense such general liability insurance coverage as will insure the provisions of this Section and other contractual indemnity obligations assumed by the Contractor in this Contract.

§ 3.18.4 The Contractor shall defend, indemnify and hold harmless the Owner, the Architect, and the Architect's consultants and their agents and employees from and against all claims, damages, losses, including, but not limited to, attorneys fees, arising out of or resulting from any type of pollution and/or environmental impairment into or upon the land, the atmosphere, or any course or body of water that is above or below ground, which is caused by any negligent or willful or wanton act or omission of the Contractor, subcontractors, or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable. The Contractor shall further indemnify and hold harmless the Owner, the Architect, and the Architect's consultants, and the agents and employees of any of them, as set out above for any acts that are outside of the contract specifications, and without the supervision or direction of the Owner, its Architects and Engineers; additionally this same indemnification shall apply to the misuse or malfunction of any equipment rented, owned, or leased by the Contractor, subcontractor, or anyone directly or indirectly employed by any of them or anyone for whose acts they may be liable. Nothing in this Section shall be construed as obligating the Contractor to indemnify or hold harmless any of the parties indemnified hereunder against liability for damage arising out of bodily injury to persons or damage to property caused by or resulting from the sole negligence of any such indemnified party, or such party's agents or employees.

The Owner assumes no responsibility or liability from loss or damage to the Contractor's equipment, materials, or supplies.

## ARTICLE 4 ARCHITECT

### § 4.1 GENERAL

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Contract and is referred to throughout the Contract Documents as if singular in number.

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

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

### § 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate For Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.2.1 Where it is stated in the Contract Documents that the Contractor shall pay for or reimburse the Owner for services of the Architect, such payment shall be at a rate of two and one half (2.5) times the Architect's Direct Personnel Expense plus any expenses incurred in providing such services. Direct Personnel Expense is defined as the direct salaries of the architect's personnel engaged on the Project and the portion of the cost of their mandatory and customary contributions and benefits related thereto, such as employment taxes and other statutory employee benefits, insurance, sick leave, holidays, vacations, pensions and similar contribution and benefits.

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

### § 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Owner Representative has authority to reject Work that does not conform to the Contract Documents. Whenever the Owner Representative considers it necessary or advisable for implementation of the intent of the Contract Documents, the Owner Representative will have authority to require additional inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. The Architect shall advise and assist the Owner Representative in performing any of the functions set forth in this Section.

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

§ 4.2.8 The Owner Representative or the Architect will prepare Change Orders and Construction Change Directives and may authorize minor changes in the Work as provided in Section 7.4..

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10. The undertaking of any inspections by the Architect is not to be construed as supervision of actual construction, nor to make the Architect responsible for providing a safe place for the performance of work by the Contractor of the Contractor's employees, or those of suppliers of subcontractors for access, visits, work, travel, or occupancy by any person.

§ 4.2.10 NOT USED.

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

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The decisions of the Owner Representative, with the advice and consultation of the Architect on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

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

## ARTICLE 5 SUBCONTRACTORS

### § 5.1 DEFINITIONS

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

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

### § 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable from the date of the Letter of Intent to Award, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within fourteen (14) days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14 day period shall constitute notice of no reasonable objection. The Contractor shall submit the list of the subcontractors along with their CT registration number and FEIN or social security number if no FEIN number is available, within ten (10) days of the Letter of Intent to Award.

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

§ 5.2.2.1 The Contractor shall not contract with a person or entity who appears on the State of Connecticut Debarment List, the Federal Davis Bacon Act Debarment List, both of which are available through:

<http://www.ctdol.state.ct.us/>

or the Federal List of Excluded Parties Listing System available through <http://epls.arnet.gov/>

or who is party to a legal dispute with the State of Connecticut.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work and is not ineligible to be contracted with in accordance with Section 5.2.2.1, the Contract Sum and/or Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity (including those who are to furnish materials or equipment fabricated to a special design) previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.2.5 As set forth more fully in the Notice and Instructions to Proposers, if the value of the masonry, electrical, mechanical (other than HVAC) and HVAC work each exceeds \$25,000, the Contractor may be required to list the names and prices of Subcontractors for masonry, electrical, mechanical other than HVAC, and HVAC work, as well as other Subcontractors or as may be required by the Bid Documents. Substitution of a Subcontractor for one named in the Bid Document, or substitution of a Subcontractor for any designated sub trade work bid to be performed by the Contractor's own forces, shall not be permitted, except for good cause. The term "good cause" includes but is not limited to a Subcontractor's or where appropriate, Contractor's: (1) death or physical disability, if the listed Subcontractor is an individual; (2) dissolution, if a corporation or partnership; (3) bankruptcy; (4) inability to furnish any performance and payment bonds shown on the Proposal Form; (5) inability to obtain, or loss of, a license



necessary for the performance of a particular category of work; (6) failure or inability to comply with a requirement of law applicable to Contractors, Subcontractors, or construction, alteration, or repair projects; and (7) failure to perform its agreement to execute a Subcontract, as set forth in the Bid Documents.

### § 5.3 SUBCONTRACTUAL RELATIONS

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

§ 5.3.2 Any Subcontract must be in the form as provided by the Owner in accordance with Section 4b-96 of the Connecticut General Statutes. Supplements or other forms of Subcontracts are permitted as long as all the basic elements of the Connecticut General Statutes Section 4b-96 form are covered. In the event of any conflict or inconsistency between the Connecticut General Statutes Section 4b-96 Subcontract form as provided by the Owner and the Contractor's standard Subcontract form, the provisions of the Connecticut General Statutes Section 4b-96 Subcontract form shall prevail. Any standard Subcontract form used will be attached as a supplement to the Connecticut General Statutes Section 4b-96 Subcontract form as provided by the Owner.

Within five days after being notified of an award of a general contract by the University or, in the case of an approval of a substitute Subcontractor by the Owner, within five days after being notified of such approval, the Contractor shall present to each listed and approved Subcontractor, or approved Substitute Subcontractor, which will be performing masonry, electrical, mechanical other than HVAC, or HVAC work, or which will be performing other subcontract work which the Owner has designated in the Bid Documents as applicable to the following requirements:

1. A Subcontract in the form as described above.
2. A notice of the time limit under this section for executing a Subcontract.

If such Subcontractor fails within five days, Saturdays, Sundays and legal holidays excluded after presentation of a Subcontract by the Contractor to execute a Subcontract in the form hereinafter set forth, the Contractor shall propose another Subcontractor for the Owner's consideration and approval. When seeking approval for a substitute Subcontractor, the Contractor shall provide the University with all documents showing (A) the Contractor's proper presentation of a Subcontract to the listed Subcontractor and (B) communications to or from such Subcontractor after such presentation. The Owner shall adjust the Contract Price to reflect the difference between the amount of the price of the new Subcontractor and the amount of the price of the prior Subcontractor if the new Subcontractor's price is lower and may adjust such Contract Price if the new Subcontractor's price is higher. The Contractor shall, with respect to each such Subcontractor or approved substitute Subcontractor, file with the Owner a copy of each executed subcontract within ten days, Saturdays, Sundays and legal holidays excluded, of presentation of a Subcontract to such Subcontractor.

### § 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

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

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and

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

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract. Contractor agrees to execute any and all other documents reasonably required to effect the assignment.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than thirty (30) days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

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

## ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

### § 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

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

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

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

### § 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable. If any part of a Contractor's work depends on proper and timely execution or relies upon the interphasing or coordinating of the work of any other separate Contractor, or the Owner, the Contractor shall allow for this interrelationship in the planning and performance of his work, without interference to any other contractor.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

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

### § 6.3 OWNER'S RIGHT TO CLEAN UP

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

## ARTICLE 7 CHANGES IN THE WORK

### § 7.1 GENERAL

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

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. All changes to the Work shall be approved by the Owner Representative. Except as permitted in Section 7.3, a change in the Contract Sum or the Contract Time shall be accomplished only by Change Order. Accordingly, no course of conduct or dealings between the parties, nor express or implied acceptance of alterations or additions to the Work, and no claim that the Owner has been unjustly enriched by any alterations or additions to the Work, whether or not there is, in fact, any unjust enrichment shall be the basis for any claim for an increase in any amounts due under the Contract Documents or a change in any time period provided for the Contract Documents..

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

### § 7.2 CHANGE ORDERS

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

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

There shall be no extension in the Contract time unless the Contractor can effectively demonstrate that the Work delayed is on the critical path of the Project Schedule in accordance with Section 8.3.

The signature of the Architect signifies that he has reviewed the change proposed, with accompanied breakdowns and subcontractors change proposals for appropriate quantities and unit costs and recommends the change. However, if the Contractor and the Owner Representative have signed the change order, the Architect's signature is not necessary in order for the Change Order to constitute a modification to the Contract which binds the Owner and the Contractor.

### § 7.2.2 CHANGE ORDER COST COMPONENTS

The contractor's proposal for a change in the Work shall be itemized completely, submitted in a detailed format acceptable to the Owner and shall include the following itemized cost components, as appropriate:

#### § 7.2.2.1 Engineered Equipment and Materials:



**Engineered Equipment** shall be defined as equipment specified by the contract from a single manufacturer. **Material** (bulk materials) shall be defined as permanent construction materials that become part of the completed installation. Engineered Equipment and Material costs shall be considered all-inclusive of the purchase cost of the equipment including all freight costs, purchasing services, expediting, and inspections and shall be substantiated by manufacturer quotes subject to review and approval by the Owner's representative, with the advice of the Architect.

#### § 7.2.2.2 Direct Field Labor Hours:

Direct labor work hours for change orders shall be itemized indicating the estimated direct labor to be expended in the actual installation of equipment and materials that will become a permanent part of the finished project. The quantity of hours shall be based upon the contractor's estimate to complete the work based upon actual field conditions subject to review and approval by the Owner's representative, with the advice of the Architect.

#### § 7.2.2.3 Direct Field Labor Costs:

Direct field labor costs are defined as cost of the direct labor estimated in the actual installation of equipment and materials that will become a permanent part of the finished project. Direct field labor may include hourly labor classifications for foremen, journeymen, apprentices, laborers, etc. Direct field labor costs may include contractor's direct labor payroll costs including social security, unemployment (federal and state), workers' compensation insurance, fringe benefits, and any other identified costs directly related to direct labor subject to review and approval by the Owner's representative, with the advice of the Architect.

The contractor's direct labor rates as outlined above are to be substantiated by a detailed direct labor cost breakdown with associated back-up support in a form acceptable to the Owner.

If the project is subject to prevailing wage rates, no wage above the prevailing rate shall be allowed unless such rate is substantiated by documentation of actual wages paid in the proposed amount or subject to labor rates submitted and accepted by the Owner as part of the contract documents.

#### § 7.2.2.4 Construction Equipment and Tool Rental:

Contractor owned or rented equipment and major tools costs are allowed as part of the cost of a Change Order if it is demonstrated to the Owners satisfaction that such costs are valid and related to the change in work. Major tools shall be defined as non-hand held tools. Pricing rates for equipment and major tools shall be acceptable if agreed to by the Owner. In such cases, equipment costs shall be submitted for review and approval by the Owner, with the advice of the Architect. Changes that require specialized equipment not already on site shall have costs shown separately and shall include justification.

#### § 7.2.2.5 Field Overheads (Indirects):

Field overhead (indirect) labor shall include field (onsite) supervision (superintendent, general foremen, field engineers)

Field overhead (Indirects) are allowed as part of a cost of a Change Order if it is demonstrated to the Owners satisfaction that such costs are valid and related to the change in work. In such cases additional costs of supervision and directly attributable to the change based on supporting data additional shall be submitted for review and approval by the Owner, with the advice of the Architect. The hourly rate for such personnel shall be based upon rates submitted to and approved by the Owner with the advice of the Architect. Changes that require specialized personnel or additional staff shall have costs shown separately and shall include justification.

Field Facilities shall include the following classifications, as applicable:

1. Temporary offices (office furniture, copiers, computers, printers, other office equipment and supplies)
2. Temporary material storage (storage vans and containers, warehouse rental)
3. Utilities (electricity, phones, data lines, restroom facilities)

Field Facilities costs are not allowed as part of the costs of a Change Order except in the event that a change involving an adjustment in contract time is submitted and approved in accordance with Section 8.3 or for changes that do not impact the critical path, it is demonstrated to the Owners satisfaction that such incremental costs are valid and related to the change in work. In such cases, Field Facilities costs shall be submitted for review and approval by the Owner, with the advice of the Architect.

§ 7.2.2.6 As noted in Section 3.6, the Owner is a tax exempt institution. The tax on materials or supplies exempted by the current regulations of the Department of Revenue Services shall not be included as a cost component of any Change Order or Change Order request/proposal.

**§ 7.2.2.7 Subcontractors:**

Subcontractors shall adhere to the same contract requirements and shall utilize change order pricing methodology that is consistent with the general contractor’s contractual agreement with the owner. Include detailed Subcontractor cost proposals as backup to all subcontractor pricing.

**§ 7.2.2.8 General and Administrative Overhead (Home Office) Costs and Profit (Overhead and Profit):**

Overhead and Profit shall be applied as a percentage to the total cost of the change and shall include:

1. All home office expenses;
2. Safety related items, including safety equipment, safety administration, and all related costs associated with the contractor’s safety program;
3. Small tools, which are defined as construction tools with a value of up to \$500;
4. Consumable materials, which are normally used in the execution of the work and as may be further defined in the general conditions section of the specifications;
5. Indirect costs as related to field administrative personnel (project manager, field safety supervisor, planners, estimators, office manager, secretarial services, document control);
6. Indirect costs as related to support staff;
7. Commercial General, Automobile, Umbrella, Aircraft and Contractor’s Pollution Liability Insurance as described in Section 11.1.2;
8. Parking;
9. Safety;
10. Commissioning Requirements;
11. Such other items as are commonly considered part of home office overhead;
12. Company vehicle, gas, mileage and travel time;
13. Union-related contributions, fees, expenses and costs;
14. Any training; and
15. Licenses.

§ 7.2.2.9 The determination of overhead and profit allowance for a contract change shall be based on the total direct cost of the work including material, labor, and equipment cost, as appropriate, utilizing the Contractor/Subcontractor Combined Overhead and Profit Markup Table as follows:

<b>Contractor/Subcontractor Combined Overhead and Profit Markup Table:</b>	
Contractor markup on self performed work	15%
Contractor markup on subcontractor work.	5%
Subcontractor markup on self performed work.	15%
Subcontractor markup on first tier sub-subcontractor work.	5%
Sub-subcontractor markup on self performed work.	10%
Subcontractor markup on Sub-subcontractor subtier work	0%
Sub-subcontractor markup on subtier work.	0%

§ 7.2.2.10 Upon computing of the direct costs and applying the Section 7.2.2.9 mark ups to the direct costs on a compounded basis, the aggregate allowance for overhead and profit on any contract change shall not exceed twenty percent (20%).

§ 7.2.2.11 Overtime, when specifically authorized by the Owner and not as an Extraordinary Measure (as defined in Section 8.2.3.2), shall be paid for by the Owner on the basis of premium payment only, plus the cost of insurance and taxes based on the premium payment period.

§ 7.2.2.12 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Owner Representative. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.2.2.13 If the Contractor does not expeditiously proceed with the work in dispute, the Owner may, in its sole discretion, cause the work to be performed by other forces, and may issue a Change Order deducting the actual cost of the work to the Owner from the Contract Sum.

§ 7.2.2.14 Bond Costs: Actual additional bonding costs associated with the value of the Change Order will be compensable only when supported by written documentation by the bonding company that the Change Order requires an increase to the original Performance, Payment, Labor or Material Bond. Such Bond Costs will be adjusted as a final Change Order to the Contractor with no additional fee or mark-up.

§ 7.2.3 The Contractor shall submit cost proposals only on "Change Order Proposal Request Form" provided in Division 1 of the Specifications or on a form and in a format acceptable to the Owner. In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials, unit prices, and Subcontracts. Subcontract proposals included in any work shall also be itemized.

§ 7.2.4 Alternates awarded by Change Order after Contract execution are not subject to Contractor, Subcontractor or Subcontractor tiers overhead and profit mark-up.

§ 7.2.5 Agreement upon and execution of any Change Order shall constitute a final settlement of all matters relating to the change in the Work which is the subject of the Change Order, including, but not limited to, all direct and indirect costs associated with such change and any and all adjustments to the Contract Sum and the construction schedule. In the event a Change Order increases the Contract Sum, Contractor shall include the Work covered by such Change Orders in Application for Payment as if such Work were originally part of the Contract Documents.

§ 7.2.6 Any percentage referred to hereafter for General Conditions, and/or Overhead and Profit included in the adjustment to the Contract Sum shall be applied to the costs of performing the work attributable to the change as stated in 7.3.7.1 through 7.3.7.6. No markup shall be allowed for premiums on bonds and insurance.

### § 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Owner Representative or Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly. The signature of the Architect signifies that he has reviewed and recommends the change. However, if the Owner Representative has signed the Change Directive the Architect's signature is not necessary in order for the Change Directive to be valid.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for a proposed adjustment to the Contract Sum and/or Contract Time, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. The Contractor must proceed promptly regardless if the directive is signed by the Contractor.

§ 7.3.7 If the contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the method for adjustment in the Contract Sum and/or Contract Time shall be determined at the sole discretion of the Owner Representative, on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, a reasonable allowance for overhead and profit in accordance with Section 7.2. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Owner Representative may prescribe, an itemized accounting together with appropriate supporting data. Any increase to Contract time will be limited to only changes that have been demonstrated through a critical path analysis in conformance with Section 8.3 and Division 1 of the Contract Documents to extend the Project end date. Unless otherwise provided in the Contract Documents, costs of performing the Work attributable to the changes for the purposes of this Section 7.3.7 shall be limited to the following as defined in Section 7.2:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools and any hand-held equipment, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds, permit fees, and sales, use or similar taxes related to the Work; and
- .5 Additional costs of field overhead personnel directly attributable to the change based on supporting data.

§ 7.3.8 If the Contractor does not expeditiously proceed with the work in dispute, the Owner may, in its sole discretion, cause the work to be performed by other forces, and may issue a Change Order deducting the actual cost of the work to the Owner from the Contract Sum.

§ 7.3.9 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Owner Representative. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 NOT USED.

§ 7.3.10 When the Owner and Contractor agree concerning the adjustments in the Contract Sum and/or Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and shall be recorded by preparation and execution of an appropriate Change Order, Change Orders may be issued for all or any part of a Construction Change Directive.

#### § 7.4 MINOR CHANGES IN THE WORK

The Architect, subject to approval of the Owner Representative, has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

## ARTICLE 8 TIME

### § 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Notice to Proceed.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term “day” as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

### § 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Contract the Contractor confirms that the Contract Time is a reasonable period for performing the Work and that the Contractor is capable of properly completing the Work within the Contract Time.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.2.3.1 The Contractor shall monitor the progress of the Work for conformance with the requirements of the construction schedule and shall promptly advise the Owner of any delays or potential delays. The accepted construction schedule shall be updated to reflect actual conditions (sometimes referred to as progress reports) as set forth in Section 3.10.1 of AIA Document A201 or if requested by the Owner. In the event any progress report indicates any delays or potential delays, the Contractor shall advise the Owner of its plan to recover the schedule, providing the Owner with a recovery schedule, and shall further take all steps necessary to correct the delay, including overtime and/or additional labor, if necessary. In no event shall any progress report or recovery schedule constitute an adjustment in the Contract Time or the Contract Sum unless any such adjustment is agreed to by the Owner and authorized pursuant to Change Order.

§ 8.2.3.2 In the event the Owner determines that the performance of the Work has not progressed or reached the level of completion required by the approved construction schedule for reasons within the responsibility of the Contractor, the Owner shall have the right to order the Contractor to take any and all corrective measures necessary to expedite the progress of construction, including, without limitation, (1) working additional shifts or overtime, (2) supplying additional manpower, equipment, and facilities and (3) other similar measure (hereinafter referred to collectively as “Extraordinary Measures”). Such Extraordinary Measure shall continue until the progress of the Work complies with the stage of completion required by the approved construction schedule. The Owner’s right to require Extraordinary Measures is solely for the purpose of ensuring the Contractor’s compliance with the construction schedule.

§ 8.2.3.3 The Contractor shall not be entitled to any adjustment in the Contract Price in connection with Extraordinary Measures required by the Owner, if the Owner determines that the conditions creating the need for such Extraordinary Measures were within the responsibility of the Contractor.

§ 8.2.3.4 The Owner may exercise the rights furnished the Owner under or pursuant to this Section as frequently as the Owner deems necessary to ensure that the Contractor’s performance of the Work will comply with any approved construction schedule or completion date established in accordance with the Contract.

§ 8.2.4 The Contractor and the Owner agree that the times specified for the performance of the Contract shall include not only the work of the original Contract but any additional work ordered by the Owner which, in the opinion of the Owner Representative, can be performed concurrently with the original work specified and therefore do not warrant the granting of an extension of time.



§ 8.2.5 Except in the event of emergency, no substantial field operations shall be performed outside of regular working hours without the prior approval of the Architect and the Owner. The Contractor shall not be entitled to additional compensation for work performed outside of regular working hours.

### § 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, or unavoidable casualties beyond the Contractor's control, then the Contract Time may be extended by Change Order for such reasonable time periods as demonstrated through a Critical Path Analysis in conformance with Division 1 of the Contract Documents and accepted by the Owner Representative.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.2.1 Claims of delay and requests for extension of time shall set forth in detail the circumstances of such claim, the dates upon which claimed delay began and ended, and the number of days' extension of time requested. The Contractor shall provide supporting documentation as the Architect and Owner may require, including a revised Construction Schedule indicating the affect of the circumstances which form the basis for the claim.

§ 8.3.2.2 The contractor shall not be entitled to an extension of time for each and every one of a number of causes which have a concurrent and interrelated effect on the progress of the Work.

§ 8.3.2.3 Claims for extension of time arising out of authorized changes in the Work shall be made in writing prior to or concurrent with the submission of the Contractor's proposal for such change. No extension of time arising out of changes in the Work will be granted after the date upon which the Contractor is authorized to proceed with such change unless specific provision for an extension of time has been incorporated in the authorization.

§ 8.3.2.4 Any additional cost to the contractor arising from such change shall be included in the amended Contract Sum set forth in such Change Order. No claim for damages for delay, arising from such change in the Work, shall be recognized or be deemed valid.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

## ARTICLE 9 PAYMENTS AND COMPLETION

### § 9.1 CONTRACT SUM

The Contract Sum is stated in the Contract and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

### § 9.2 SCHEDULE OF VALUES

§ 9.2.1 Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Owner Representative may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.2.1.1 Submission of the Schedule of Values shall be made within five (5) days for projects under One Million Dollars (\$1,000,000.00) and for all others within thirty (30) days of the Contract execution.

§ 9.2.1.2 The Schedule of Values shall be submitted (typewritten) on an AIA Document G702 form and should be broken down into a minimum of sixteen (16) divisions based on the Construction Specifications Institute (CSI) Guidelines and subdivided further by Materials and Labor.

### § 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 By the twenty-fifth of each month, the Contractor shall submit to the Owner Representative and the Architect a Draft Application for Payment for Work in the form of an AIA Document G702, Application and Certification for

Payment, supported by AIA Document G703, Continuation Sheet. The latest edition of each document must be used.

The Owner Representative and the Architect will within ten (10) days after receipt of the Contractor's Draft Application for Payment notify the Contractor in writing of all necessary revisions.

The Contractor shall make all revisions to the Application for Payment as required by the Owner Representative.

The Contractor shall then submit to the Owner Representative and the Architect an Application for Payment for Work in the form of a notarized AIA Document G702, Application for Payment, supported by AIA Document G703, Continuation Sheet, free of any handwritten marks, notes, annotations, etc. and an Affidavit of Payment and Release of Claims form (either partial release or final release as appropriate) in a form as provided by the Owner.

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

§ 9.3.1.1 Each payment requisition submitted by the Contractor shall include a statement showing the status of all pending construction change orders, other pending change directives and approved changes to the original contract or subcontract. Such statement shall identify the pending construction change orders and other pending change directives, and shall include the date such change orders and directives were initiated, the costs associated with their performance and a description of any work completed. As used in this subsection, "pending for construction change order" or "other pending change directive", means an authorized directive for extra work that has been issued to a contractor or a subcontractor.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.1.3 Such Application for Payment shall include a deduction of seven and one half (7.5%) percent of the estimated amount of the application to be retained by the Owner until the completion of the entire Contract in an acceptable manner. The Contractor shall be prohibited from withholding more than seven and one half (7.5%) percent retainage from any payment which is otherwise due to any Subcontractor.

§ 9.3.1.3.1 In addition, if the State Commission on Human Rights and Opportunities ("CHRO") authorizes the award or execution of this contract in advance of CHRO's approval of the Affirmative Action Plan required to be submitted by the Contractor pursuant to Connecticut General Statutes Section 46a-68d, the Owner will withhold an additional two percent (2%) of the total contract price per month from any payment made to such Contractor, until such time as the Contractor has received approval from CHRO of the Affirmative Action Plan. Moreover, if CHRO determines through its complaint procedure and the hearing process provided in Connecticut General Statutes Section 46a-56(c) that a contractor or subcontractor is not complying with anti-discrimination statutes or contract provisions required under Connecticut General Statutes Section 4a-60 or 4a-60(a) or the provisions of Connecticut General Statutes Section 46a-68c to 46a-68f, inclusive, and if so ordered by the presiding officer after such hearing and upon a finding of noncompliance, the University shall retain two percent (2%) of the total contract price per month on the contract with the Contractor.

§ 9.3.1.4 Whenever the Owner has designated a separate section for a class of work the Contractor shall, when applicable, state as part of its application for partial payment that it considers the work required to be done under any such separate section to be fully completed in accordance with the terms of the Contract. The Owner shall thereupon conduct an inspection of the work in such class, and if it finds that such work has been fully completed in accordance with the terms of the Contract, it shall issue a statement certifying that such work is accepted as fully completed, and shall pay the Contractor in full for such work.

§ 9.3.2 Unless otherwise specifically approved, the Owner will pay only for material and equipment delivered and incorporated in the Work. If approved in advance by the Owner, payment may be similarly made for material and equipment suitably stored on site or off site at a location agreed upon in writing. Payment for materials and

equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.2.1 Payment for stored material either on site or off site will require Owner's prior approval. Approval will be dependent upon demonstration of hardship due to extended time duration between required purchase and actual field installation or the critical nature of the commodity in relationship to the critical path of the construction schedule. Additionally, the Contractor must provide secured storage, insurance coverage for the material during storage, transfer of ownership of the material to the Owner and indemnify the Owner from any delay, cost associated with or resulting from, the loss or damage of such material during such storage. Payment for such material will be paid for at 80% of invoice verified cost. No stored payment will be considered for raw materials. Those items requiring fabrication must be complete so that identification and appropriate documentation can be obtained to insure such items are part of the work identified in this Contract.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.3.4 If payment for stored products is approved, Contractor shall furnish with Application for Payment a vendor invoice establishing value of material and equipment stored along with a statement of amount to be paid to vendor.

§ 9.3.4.1 Such stored items are subject to prior approval for storage and to inspection by Architect and Owner before payment is recommended.

§ 9.3.4.2 Contractor shall give Owner Certificates of Insurance in accordance with Contract Documents for the full value of the items stored. Insurance to be maintained until items are incorporated in the Work.

#### § 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

#### § 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect following consultation with the Owner Representative may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor



and Owner as provided in Section 9.4.1. The Architect following consultation with the Owner Representative may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 after prior notice, defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless full bond coverage, insurance or security acceptable to the Owner is provided by or demonstrated by the Contractor, or unless the Contractor demonstrates to the Owner that the claims do not have a reasonable basis in fact;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment in accordance with the provisions of this Contract;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 injury to persons or damage to the Work or property of the Owner, other Contractors, or others caused by the act of neglect of the Contractor or any of his Subcontractors;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance of the Contract Sum would not be adequate to cover actual or liquidated damages for the anticipated delay unless the Contractor demonstrates to the satisfaction of the Owner that it or others for whom it is responsible are not responsible for such delay;
- .7 repeated failure to carry out the Work in accordance with the Contract Documents;
- .8 failure to submit Construction Schedules as outlined in Division 1 of the Specifications in the time prescribed;
- .9 failure to submit all documents necessary for compliance with CHRO requirements;
- .10 failure to submit all copies of all certified payrolls;
- .11 failure to provide copies of subcontractors contracts per statute; or
- .12 failure to submit any other documentation requested by the Owner necessary for compliance with the requirements of any regulatory agency.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld. The Owner shall not be deemed in default by reason of withholding payment while any of the above grounds remain uncured, nor shall any interest accrue or be payable with respect to any payments so withheld.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.5.4 The Owner shall have the right to apply any such amounts so withheld in such manner, as the Owner may deem proper to satisfy such claims or to secure such protection. Such application of such amounts shall be payments to the Contractor.

## § 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has certified the Application for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, or shall so notify the Contractor of the Owner's intent to withhold payment to the extent reasonably necessary to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions of its Subcontractors due to the causes set forth in Section 9.5.1.

§ 9.6.2 For every Contract with the Owner for the construction, alteration or repair of any building or work;

- .1 The Contractor within thirty (30) days after payment to the Contractor by the Owner, shall be required to pay any amounts due any Subcontractor, whether for labor performed or materials furnished, when the labor or materials have been included in a requisition submitted by the Contractor and paid by the Owner;
- .2 The Contractor shall include in each of its subcontracts a provision requiring each Subcontractor to pay any amounts due any of its Subcontractors, whether for labor performed or materials furnished,

within thirty (30) days after each Subcontractor receives a payment from the Contractor which encompasses labor or materials furnished by such Subcontractor.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven (7) days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Pursuant to Connecticut General Statutes Sections 10a-109a through 10a-109y:

- .1 No payments shall be made by the Owner on account of this Contract for this project until the bills or estimates presented for such payments shall have been duly certified to be correct by the Owner;
- .2 The obligations of the Owner or the State of Connecticut to make payments to the Contractor for services, labor, or materials provided on this project are limited to those amounts set forth in the Contract Documents and any agreed upon changes or amendments thereto. Neither the Owner nor the State of Connecticut shall or may be liable to make payments in excess of such amount.

## § 9.7 FAILURE OF PAYMENT

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven (7) days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven (7) days after the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven (7) additional days' written notice to the Owner and Architect be entitled to the applicable statutory interest.. Said provision does not apply where the Owner has submitted to the Contractor its intention to withhold payment in accordance with Section 9.6.1 or where the Architect has submitted to the Contractor its intention to withhold certification in accordance with Section 9.5.1.

## § 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize without impact or interruptions the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. The Certificate of Substantial Completion shall become valid upon the written approval thereof by the Owner Representative. Upon such acceptance and consent of surety, if any, and release of the Project from CHRO, applying to such Work or designated portion thereof, at the sole discretion of the University, reductions in retainage may be allowed before the Contractor reaches substantial completion. Such reductions shall not be allowed without a release from the bond company. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.8.6 **Certifications.** The Contractor at completion of construction shall provide to the Owner a “Certificate of Substantial Compliance” bearing original signatures of an officer of the company stating: “This is to CERTIFY that in my professional opinion the complete structure/renovations described above is in substantial compliance with the approved construction documents on file with the University of Connecticut. Minor deviations and special stipulations are noted below (if any)”.

#### § 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

#### § 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor’s written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect’s knowledge, information and belief, and on the basis of the Architect’s on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect’s final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor’s being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner’s property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed

to expire until at least thirty 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner, (6) all documents necessary for compliance with CHRO requirements and as required to obtain the written statement of release from CHRO referenced in Section 9.8.5, (7) copies of all certified payrolls, (8) certifies that all material installed does not contain asbestos, (9) the Certificate of Substantial Compliance referenced in Section 9.8.6, and (10) any other documentation requested by the Owner necessary for compliance with the requirements of any regulatory agency. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such claim. If such claim remains unsatisfied after payments are made to the Contractor, the Contractor shall promptly pay to the Owner all money that the Owner may be compelled to pay in discharging such claim, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor, the written approval of the Owner Representative and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 NOT USED.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

## § 9.11 LIQUIDATED DAMAGES

§ 9.11.1 Time is of the essence to the Contract Documents and all obligations there under. The Contractor acknowledges and agrees that if the Contractor fails to achieve Substantial Completion, or causes any delay to the Substantial Completion of any portion of the Work within the Contract Time, as may be extended by the Owner, the Owner will sustain extensive damages and serious loss as a result of such failure. The exact amount of such damages will be difficult to ascertain. Therefore, the Owner and the Contractor agree as follows:

- .1 If the Contractor fails to achieve Substantial Completion of the Work within the Contract Time and as otherwise required by the Contract Documents, the Owner shall be entitled to retain or recover from the Contractor, as liquidated damages and not as a penalty, the amount per calendar day specified in §3.3 of the AIA A101-2007 for every calendar day that the Contractor is in default, commencing upon the first day following the expiration of the Contract Time and continuing until the actual date of Substantial Completion. Such liquidated damages are hereby agreed to be a reasonable pre-estimate of damages the Owner will incur as a result of delayed completion of the Work.
- .2 The Owner shall be entitled to recover as actual damages the Owner's costs, expenses and damages it incurs in connection with the completion of the Work in the event that the Contractor fails to complete the Work, and/or the Contractor's surety fails to perform the Work pursuant to any Performance Bond. The Owner shall be entitled to recover as actual damages any payments it makes to any subcontractor or materials supplier that the Contractor's surety fails to pay pursuant to any Payment Bond.
- .3 The Owner may deduct liquidated damages described in Clause 9.11.1.1 from any unpaid amounts then or thereafter due the Contractor under this Contract. Any liquidated damages not so deducted from any unpaid amounts due the Contractor shall be payable to the Owner, together with interest from the date of the demand at the legal rate.



## ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

### § 10.1 SAFETY PRECAUTIONS AND PROGRAMS

§ 10.1.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract. Prior to and as a condition of mobilization on site, the Contractor shall submit a Safety Plan to Owner. To the extent the Owner provides safety manuals or other information, any such manuals and information shall be deemed minimum requirements for the Contractor's fulfillment of its safety obligations. Safety fines may be assessed based on Owner's safety plan and or Occupational Safety and Health Administration ("OSHA").

§ 10.1.1.1 In accordance with C.G.S. Section 31-53b, the Contractor is required to submit proof that each employee has completed a course of at least ten hours in duration in construction safety and health approved by the federal OSHA.

§ 10.1.1.2 The Contractor shall remove all snow and ice as may be required for the proper protection and/or prosecution of the Contractor's work. The Contractor shall coordinate and cooperate with the Owner for such activities.

§ 10.1.2 **Contractors Safety Program:** The Contractor hereby acknowledges that the job site safety will be of utmost importance. Contractor shall be responsible for initiating, maintaining and supervising safety and anti-substance abuse precautions and programs in connection with the Work. Contractor shall provide all protection to prevent injury to all persons involved in any way in the Work and all other persons, including, without limitation, the employees, agents, guests, visitors, invitees and licensees of the Owner who may visit or be affected thereby. These precautions shall include, but in no event be limited to: (1) those set forth in the most current provisions of the Owner's Contractor Environmental Health and Safety Manual, which is incorporated by reference as a Contract Document; (2) the posting of danger signs and personal notification to all affected persons of the existence of a hazard of whatever nature; (3) the furnishing and maintaining of necessary traffic control barricades and flagman services; (4) the use, or storage, removal and disposal of required explosives or other hazardous materials only under the supervision of qualified personnel and after first obtaining permission of all applicable governmental authorities; (5) and the maintenance of adequate quantities of both hose and operable fire extinguishers at the job site. The Contractor shall set forth in writing its own safety and anti-substance abuse precautions and programs in connection with the Work and if requested by the Owner submit the same to the Owner or its designee for review. The Owner may but shall not be obligated to make suggestions and recommendations to the Contractor with respect thereto.

- .1 **Compliance of Work, Equipment and Procedures with all Laws:** All Work, whether performed by the Contractor and its Subcontractors of any tier, or anyone directly or indirectly employed by any of them, and all equipment, appliances, machinery, materials, tools and like items incorporated or used in the Work, shall be in compliance with and conform to: (a) all applicable laws, ordinances, rules, regulations and orders of any public, quasi-public or other governmental bodies relating to the safety of persons and their protection against injury, specifically including, but in no event limited to the Federal Occupations Safety and Health Act of 1970, as amended and all rules and regulations now or hereafter in effect pursuant to said Act and the OSHA Act of the State of Connecticut, as amended and all rules and regulations now or hereafter in effect pursuant to said Act; and (b) all rules, regulations and requirements of the Owner and its insurance carriers relating thereto, including without limitation the O. In the event of conflicting provisions the more stringent shall govern. The Owner reserves the right to assess fines and penalties to the Contractor for violations of the Owner's Contractor Environmental Health and Safety Manual as may be more specifically referred to in the Manual and may deduct such fines and penalties from any payments due the Contractor under the Contract.
- .2 **Contractors Designation of Safety Program Administrator:** The Contractor shall designate a qualified member of its organization at the job site in accordance with the requirements of the Owner's Contractor Environmental Health and Safety Manual whose duties shall include enforcement of the Contractor's Safety Program to assure compliance with Article 10 and to prevent accidents. This position may be required to be a full time position dedicated to this Project. This person's name, qualifications and the estimated number of man-hours of effort per week performing this function shall be submitted to the Owner in writing. His or her identity, qualifications and level of effort must be satisfactory to the Owner who shall have the sole discretion to approve or reject same. Any reduction to this schedule must be submitted to the Owner for approval. The Contractor

shall further cause each of its Subcontractors of any tier to designate a qualified safety representative to assist the Contractor's Representative in the performance of its duties as described above and the names of such representative shall be given to the Owner.

3. **Suspension of Contractor's Work:** If in the opinion of the Owner or its designee the Contractor shall fail to provide a safe area for the performance of the Work or any portion thereof the Owner or its designee shall have the right but not the obligation to suspend Work in the unsafe area. Contractor shall be liable for all costs incurred of any nature (including without limitation overtime pay, liquidated damages or other costs resulting from delays) resulting from the suspension.
4. **Right of Owner to have Contractor Send Worker Home:** The Contractor shall provide to each worker on the job site the proper safety equipment for the duties being performed by that worker and will not permit any worker on the job site who fails or refuses to use the same. The Owner shall have the right but not the obligation to order the Contractor to cause any worker to be sent home for the day or to otherwise temporarily or permanently remove him or her from the job site for his or her failure to comply with safe practices or anti-substance abuse policies. Contractor shall promptly comply with such orders from the Owner and shall be liable for any and all costs of whatsoever nature, including attorney's fees paid or incurred by the Owner.

§ 10.1.3 **Protection of Work and Property; Responsibility for Loss:** The Contractor shall, throughout its performance of the Work, maintain adequate and continuous protection of all property of the Owner and third parties and of the Work and temporary facilities against loss or damage from whatever cause arising out of the performance of the Work and shall comply with the requirements of the Owner and its insurance carriers and with all applicable laws, codes, rules and regulations with respect to the prevention of loss or damage to property as a result of fire or other hazards.

§ 10.1.4 **Emergencies:** In any emergency affecting the safety of persons or property, or in the event of a claimed violation of any federal or state safety or health law or regulation arising out of or in any way connected with the Work or its performance, the Contractor shall act immediately to prevent threatened damage injury or loss or to remedy said violation whichever is applicable, failing which the Owner or its Designee may immediately take whatever action it deems necessary including, but not limited to, suspending the Work.

The Owner may offset any and all cost or expenses of whatever nature including attorneys' fees paid or incurred by the Owner in taking such action against any sums then or thereafter due to the Contractor. The Contractor shall defend indemnify and hold the Owner, and its officers, agents, employees, harmless against any and all costs, expenses or liability in accordance with Section 3.1.8. If the Contractor shall be entitled to any additional compensation or extension of time claimed on account of emergency work not due to the fault or neglect of the Contractor or its Subcontractors or Sub-subcontractors, it shall be handled as a request for a Change Order as provided in Section 7.2 of this Contract.

## § 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

The Contractor shall provide and pay for whatever security measures the Contractor deems necessary to protect the Contractor's work until acceptance by the Owner through issuance of a Certificate of Substantial Completion.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 At a minimum, the Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities. Additionally, the Contractor shall maintain all passageways, guard fences, lights and other facilities for protection.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor, at a minimum, shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

- .1 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary, the Contractor shall give the Owner advance written notice of at least five (5) days prior to bringing to the site or utilizing such explosives, materials, equipment or methods..

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 and indemnify and save the Owner harmless for all damage or injury to referenced persons and property caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable in whole or in part to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

- .1 The Contractor shall repair or replace any such damage at no additional cost to the Owner. Such repair or replacement shall be completed within one week of the damage or as directed by the Owner Representative. If the Contractor fails or refuses to repair the damage promptly, the Owner may have the necessary Work performed and charge the cost to the Contractor.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not load or permit any part of the construction or site to be loaded so as to endanger the safety of persons or property or cause damage or create an unsafe condition.

§ 10.2.8 All materials furnished and all work installed shall comply with the rules and recommendations of the National Board of Fire Underwriters; with all applicable State and local codes, laws, ordinances, rules and regulations; with all requirements of local utility companies and with the recommendations of the Insurance Rating Organization having jurisdiction.

§ 10.2.9 All apparatus, equipment and construction such as ladders, scaffolds, chutes, etc. shall comply with the recommendations of the manual of Accident Prevention in Construction published by the Associated General Contractors of America.

### § 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.1.1 Upon request, the Owner, through the Office of Environmental Health and Safety, will provide the Contractor with a written copy of the Hazard Communication Program and chemical inventory for work areas in which they will be working. The Owner, upon request, will make available to the Contractor an opportunity to review the Material Safety Data Sheets ("MSDS") on file for areas where hazardous chemicals are used and stored for work areas they will be working in.

§ 10.3.1.2 Per OSHA's Hazard Communication Standard, Contractors are expected to inform and provide the Owner any MSDSs of materials to be used in their work at the University of Connecticut. Contractors shall provide a chemical inventory and information on the location of chemical use and storage. The Contractor shall be responsible for the removal of all unused portions of chemicals and their waste products from the Project Site. A copy of the Hazard Communication Policy is available for review by the Contractor or prospective Proposers of the Contract at the Office of Capital Project & Contract Administration or at:

<http://www.ehs.uconn.edu/Occupational/occuhazard.php>

or <http://ors.uhc.edu>

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Upon written request, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up which may have occurred, but must be demonstrated as impacting the critical path of the schedule.

§ 10.3.3 NOT USED.

§ 10.3.4 In no event, however, shall the Owner have any responsibility for any substance or material that is brought to the Project site by the Contractor, any Subcontractor, any materialman or supplier or any entity for whom any of them is responsible. The Contractor agrees not to use any fills or other materials to be incorporated into the Work, which are hazardous, toxic or comprised of any items that are hazardous or toxic. In the event it is determined materials that are hazardous, toxic or comprised of items that are hazardous or toxic have been used as fills or incorporated into the Work, the Contractor, at its sole expense, shall be responsible for immediate removal, proper disposal, and replacement of materials of the Work and surrounding areas so affected.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 Contractor shall verify that all material/equipment installed in any portion of the Work shall be asbestos free. The Owner may perform sampling to verify all suspect material/equipment is asbestos free. If any material/equipment is found to contain asbestos, the Contractor shall pay for the lawful and proper removal and disposal of product(s), and re-install acceptable material/equipment all at its sole expense. Contractor shall visually and in writing provide to Owner or its representative proof that products or equipment to be used are non-asbestos containing, asbestos free, do not contain asbestos, or similar via manufacture statement on product itself or accompanying information.

10.3.6.1 For purposes of this requirement, materials include, but are not limited to, the following:

- .1 **Surfacing Treatments**  
Fireproofing Acoustical Plaster  
Finish Plasters, Skim Coats of Joint Compound, Fibrous Type Paint Applications
- .2 **Thermal System Insulation**  
Equipment Insulation



Boiler, Breeching, Boiler Rope, Duct or Tank Insulation, Cement or Mortar used for boilers and refractory brick  
Piping and fitting insulations including but not limited to Wrapped Paper, Aircell, Millboard, Rope, Cork, Preformed Plaster, Job Molded Plaster and coverings over fibrous glass insulation

**3 Roofing and Siding Miscellaneous Materials**

Insulation Board Vapor Barriers  
Coatings Felts  
Flashing Shingles  
Cementitious Board (Transite) Galbestos  
Non-Metallic or Non-Wood roof Decking

**4 Other Miscellaneous Materials**

Cove Base Floor Leveling Compound  
Ceiling Tile Vermiculite Insulation  
Vibration Isolators Laboratory Tables and Hoods

§ 10.3.7 Most buildings at the University of Connecticut have some Asbestos Containing Materials (ACM) used as building products. Any known ACM has been identified on the Plans and Specifications of this Contract.

§ 10.3.8 Every effort has been made to identify ACM; however, there may be additional ACM present in the area of work. This suspected ACM may become apparent especially during the demolition phases of contracts.

§ 10.3.9 The Contractor shall make every attempt to accomplish work in such a manner as to not disturb ACM or suspected ACM. If the Work cannot be accomplished without disturbing ACM or suspected ACM, or if ACM abatement is specifically incorporated as part of this contract, the Contractor must have the applicable training, licenses, or any other qualifications necessary to perform such work safely and in accordance with Federal, State and Local regulations.

§ 10.3.10 The Contractor shall bring to the immediate attention of the Owner Representative the location of suspected ACM that will be disturbed by work required under this Contract. No work shall be attempted that could result in a release of ACM to the environment.

§ 10.3.11 Asbestos surveys for most buildings of the Owner which are part of this Contract are available for Contractor's review in the Architectural and Engineering Services building or for UCHC projects at the Facilities Development & Operations office..

§10.3.12 Exposure levels for lead in the construction industry are regulated by 29 CFR 1926.62. Construction activities disturbing surfaces containing lead-based paint (LBP) which are likely to be employed, such as sanding, grinding, welding, cutting and burning, have been known to expose workers to levels of lead in excess of the Permissible Exposure Limit (PEL). Contractor shall conduct demolition and removal work specified in the Contract Documents in conformance with these regulations. In addition, construction debris/waste may be classified as hazardous waste. Disposal of hazardous waste material shall be in accordance with 40 CFR Parts 260 through 271 and Connecticut Hazardous Waste Management Regulations Section 22a-209-1; 22a-209-8(c)-11; and 22a-449(c)-100 through 110.

§ 10.3.13 Where a child under the age of six resides, the work shall also be in accordance with Connecticut Regulations Section 19a-111-1 through 11.

§ 10.3.14 **If this is a renovation project**, testing for lead-based paint has been conducted at selected facilities of the Owner. Results of LBP testing are for information purposes only. Under no circumstance shall this information be the sole means used by the Contractor for determining the extent of LBP. The Contractor shall be responsible for verification of all field conditions affecting performance of the Work.

§ 10.3.15 Except for UCHC projects, lead based paint testing results are available at the Architectural and Engineering Services building. Contractors proposing on this project are requested to visit this office and review lead testing documents.

## § 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

## 10.5 LOCKOUT/TAGOUT PROCEDURES REQUIRED BY OSHA

§ 10.5.1 OSHA regulations 29 CFR 1910.147 (The Control of Hazardous Energy) requires employers to develop procedures for the lockout or tag out of machines or equipment. The purpose is to prevent injuries by ensuring that hazardous forms of energy are isolated (locked or tagged out) before employees perform any servicing or maintenance activities, which could result in the unexpected energization, start-up or release of stored energy. This includes electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy sources.

§ 10.5.2 The Owner has a written Lockout/Tag out Policy, as required under 29 CFR 1910.147. The policy is available for review by the Contractor or prospective Proposers of this Contract upon request.

§ 10.5.3 Prior to commencing any work under this Contract that will or may involve exposure to potentially hazardous energy; the Contractor shall notify the Owner Representative of the lockout/tag out procedures to be used. Lockout/tag out procedures shall be exchanged between the Contractor and the Owner Representative at the Pre-Construction Conference.

§ 10.5.4 All work carried out under this Contract that will or may involve exposure to potentially hazardous energy shall be carried out in accordance with all applicable Federal, State and local rules and regulations, including OSHA regulation 29 CFR 1910.147 (The Control of Hazardous Energy) and 1926.417 (Locking and Tagging of Circuits).

## 10.6 SOLVENT BASED PRODUCTS

§ 10.6.1 The use of solvent-based products, including paints and adhesives within occupied areas of buildings shall not be allowed as part of this project, unless specifically directed in other provisions of the Contract Documents. The use of solvent-based products in non-occupied areas shall be carried out using adequate ventilation that prevents migration of vapors into occupied areas. If solvent-based products are to be used in occupied areas, then work shall only be accomplished on nights or weekends and with prior approval with the Owner Representative; continuous ventilation should be provided as required to mitigate odors on building occupants using adequate ventilation. The Contractor's representative shall notify the Owner Representative, the Department of Environmental Health and Safety and the Building Safety Committee Representative two (2) days prior to the intended date of such work.

## 10.7 CONFINED SPACE ENTRY

§ 10.7.1 Certain areas at the University of Connecticut such as manholes, tanks, vessels, trenches, ducts, etc. meet the OSHA definition of a confined space (pursuant to 29 CFR 1910.146) in that they: 1) are large enough and so configured that an employee can bodily enter and perform assigned work; 2) have limited or restricted means for entry or exit; and 3) are not designated for continuous employee occupancy.

§ 10.7.2 According to this OSHA regulation, employers are required to implement a confined space entry permit program if its employees will enter confined spaces which have one or more of the following characteristics: 1) contain or have the potential to contain a hazardous atmosphere, 2) contain a material that has the potential for engulfing and entrant, 3) have an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls, or by a floor which slopes downward and tapers to a smaller cross-section, or 4) contain any other recognized safety or health hazard. Such a space is considered to be a permit-required confined space.

§ 10.7.3 The Owner has a written confined space entry policy, which implements a permit program. The policy is available for review by the Contractor or prospective Proposers of this Contract at the Architectural and Engineering Services building.

§ 10.7.4 Prior to commencing work that may require entry into a confined space; the Contractor shall consult with the Owner Representative and the Environmental Health and Safety Department to become apprised of the locations, the nature of the hazards, and safe entry procedures of known permit-required confined spaces.

§ 10.7.5 The contractor shall coordinate entry operations with the Owner through the Owner Representative when both Owner and Contractor personnel will be working in or near permit spaces.

§ 10.7.6 Any work carried out under this Contract that will require entry into a confined space shall be carried out in accordance with all applicable Federal, State, and Local rules and regulations, including OSHA regulations 29 CFR 1910.146 (Permit required confined spaces), 1926.21(b) (6) (Safety Training and Education – Employer responsibility (confined spaces)), 1926.352(g) (Fire prevention in enclosed spaces) and 1926.353(b) (Welding, cutting and heating in confined spaces).

## 10.8 EXCAVATION AND TRENCHING

§ 10.8.1 The Owner has a written Excavation and Trenching Policy, which can be found in the Owner's Contractor Environmental Health and Safety Manual.

§ 10.8.2 Any work carried out under this Contract that will require excavation or trenching shall be carried out in accordance with all applicable Federal, State and Local rules and regulations, including OSHA regulation 29 CFR 1926 Subpart P (Excavations).

§ 10.8.3 At a minimum, the Contractor shall comply with established Owner's Contractor Environmental Health and Safety Manual, which have been previously provided to bidders and/or are available for review upon request. These policies are hereby incorporated by reference herein, including but not limited to: Policies on Lockout/Tagout; Confine Space Entry; Code of Conduct; Sexual Harassment; Racism and Acts of Intolerance; Smoking.

## ARTICLE 11 INSURANCE AND BONDS

### § 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall demonstrate and provide evidence of insurance in an industry accepted certificate of insurance and maintain with a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

- .1 **Worker's Compensation Insurance:** Worker's Compensation Insurance in Statutory Limits of the Worker's Compensation Laws of the State of Connecticut, and other extensions, with Coverage B – Employer's Liability of not less than limits of \$1,000,000 – Each Accident, \$1,000,000 – Policy Limit and \$1,000,000 – Each Employee. Coverage under the Broad Form All-State extension shall also be included.

- .2 **Commercial General Liability Insurance:** \$1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage. Coverage shall include Premises and Operations, Independent Contractors, Products and Completed Operations, Contractual Liability and Broad Form Property Damage coverage. If a general aggregate is used, the general aggregate limit shall apply separately to the project or the general aggregate limit shall be twice the occurrence limit. The coverage shall contain no special limitations on the scope of protection afforded to the State. Said policy shall also state that it is primary insurance, and that the Owner, the State of Connecticut, the Contractor, and such other persons or interests as the Owner may designate as additional insured in connection with the performance of the Work, including hazards of operations (including explosion, collapse and underground coverage), elevators, independent contractors, employees as additional insured, completed operations for a period of three (3) years after final completion of the Work.
- .3 **Automobile Liability Insurance:** Automobile Liability Insurance covering all owned, non-owned and hired automobiles, trucks and trailers of the respective parties required to provide and maintain this insurance. Such insurance shall provide coverage not less than that of the Standard Comprehensive Automobile Liability policy in limits not less than, as respects Contractor and all tiers of Subcontractors, \$1,000,000 Combined Single Limit each occurrence for Bodily Injury and Property Damage.
- .4 **Umbrella Liability Insurance:** Umbrella liability (following form) in the amount of \$5,000,000 per Occurrence.
- .5 **Aircraft Liability:** If aircraft of any kind is used by the Contractor, any tier of Subcontractor or by anyone else on their behalf, the Contractor or Subcontractor shall maintain or cause the operator of the aircraft to maintain aircraft public liability insurance insuring passengers and the general public against personal injury, bodily injury or property damage arising from aircraft owned, used, operated or hired in connection with the Work by the Contractor, Subcontractor or anyone else in limits of \$50,000,000 Combined Single Limit for any one occurrence, each aircraft.
- .6 **Contractor's Pollution Liability:** If the work of this project includes the abatement, removal, cleanup or handling of any asbestos, PCB's, lead based paint, or other pollutants or hazardous materials, then the Contractor shall also provide evidence that Pollution Liability Insurance, including completed operations and Contractual Liability coverage of not less than limits of \$5,000,000 has been procured and is in force on the project. However, if the Contractor demonstrates that coverage for claims arising out of the abatement, removal, cleanup or other handling of asbestos, PCB's, lead based paint, or other pollutants or hazardous materials is covered by the Contractor's general liability insurance, a separate Contractor's Pollution Liability Policy will not be required.
- .7 **Builder's Risk:** If the Project is for new construction, rather than for renovations to an existing structure or facilities, the Contractor shall purchase and maintain Builder's Risk Insurance, ISO CP 30 10 00 special form, in the amount of the initial contract amount plus values of subsequent modifications or change orders on a replacement cost basis. The Builder's Risk coverage shall be written on a Special Covered Cause of Loss form and shall include theft, vandalism, malicious mischief, collapse, temporary buildings, transit, debris removal, increased cost of construction, architect fees and expenses, soft costs, flood and earthquake. Builder's Risk shall include portions of work located away from site but intended for use at the site. Contractor shall obtain consent of the insurance company and delete any provisions with regard to restrictions within any occupancy clause. Equipment break down coverage shall be included and shall cover insured equipment during installation and testing.
- .8 It is agreed that the Owner, the State of Connecticut, their officers, officials, agents, employees, boards and commissions shall be additional named insureds under the coverages described in Clauses 11.1.2.2; 11.1.2.3; 11.1.2.4; 11.1.2.5; 11.1.2.6; 11.1.2.7 and that said coverage(s) is provided for all operations, uses, occupations, acts and activities of the insureds under the Contract Documents and under any amendments, modifications, extensions or renewals of said Contracts regardless of whether liability is attributable to the named insureds or a combination of the named insureds and the additional named insureds.
- .9 If the Contractor is a joint venture, the joint venture and each individual partner of the joint venture must be designated in each policy as named insureds.
- .10 A Certificate of Insurance shall clearly indicate the Project name, Project number or some easily identifiable reference to the relationship to the Owner.
- .11 Each liability policy shall contain a Cross Liability Endorsement.

- .12 Coverage, written on an occurrence basis, shall be maintained without interruption from date of commencement of the Work until date of final payment and termination of any coverage required to be maintained after final payment.
- .13 All insurance secured by Contractor or Subcontractors pursuant to the Owner's requirements under the provisions of this Section 11.1.2 shall be in policies subject to the Owner's approval, as to form, content, limits of liability, cost and issuing companies. Such companies shall have and maintain an A.M. Best rating of not less than A-(VII), or otherwise acceptable to Owner.
- .14 If the Contractor maintains insurance against physical loss or damage to Contractor's construction equipment and tools, such insurance shall include an insurer's waiver of rights of subrogation in favor of Owner.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled, terminated or materially changed, altered or allowed to expire until at least thirty (30) days' prior written notice has been given to the Owner. If any of the foregoing insurance coverages are required to remain in force after final payment and are reasonably available, an additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness in accordance with the Contractor's information and belief and shall identify on their faces the project name and contract number to which they apply. The Certificate(s) of Insurance must also provide clear evidence that the Contractor's Insurance Policies contain at least the minimum limits of coverage and special provisions prescribed in Article 11.

§ 11.1.4 Form Certificates acceptable by the Owner shall be Accord 25(2001/08) together with Endorsement CG 20 37 07 04.

§ 11.1.5 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's Consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

## § 11.2 OWNER'S LIABILITY INSURANCE NOT USED.

## § 11.3 PROPERTY INSURANCE

§ 11.3.1 Property insurance on an all-risk basis, including coverage for the perils of earthquakes and floods, has been purchased by the Owner. Insurance required by Section 11.3 is not intended to cover machinery, tools and equipment of the Contractor which is used in the performance of the Work, but is not incorporated into the permanent improvements, nor any materials and equipment paid for by the Owner and stored off-site, for which the Contractor shall procure property insurance satisfactory to the Owner. The Contractor shall, at its own expense, provide coverage for its machinery, tools and equipment subject to these provisions.

§ 11.3.1.1 NOT USED.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then procure and maintain insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the Owner's property insurance requires deductibles, the Contractor shall pay costs not covered because of such deductibles.



§ 11.3.1.4 NOT USED.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

#### § 11.3.2 BOILER AND MACHINERY INSURANCE

The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ 11.3.3 LOSS OF USE INSURANCE  
NOT USED.

§ 11.3.4 NOT USED.

§ 11.3.5 NOT USED.

§ 11.3.6 NOT USED.

#### § 11.3.7 WAIVERS OF SUBROGATION

The Owner and Contractor waive all rights of subrogation against (1) each other and any of their subcontractors of all tiers, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors of all tiers, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3, the boiler and machinery insurance maintained by the Owner or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Contract between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five (5) days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the

method of binding dispute resolution in the Contract. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

#### § 11.4 PERFORMANCE BOND; PAYMENT BOND AND GUARANTY/CASHBOND

§ 11.4.1 The Contractor shall furnish to the Owner and deliver at the time of contract signing Performance and Payment Bonds pursuant to the requirements of Connecticut General Statutes Section 49-41 et seq. and the requirements of this Section 11.4. In all cases where the Contract Sum exceeds \$100,000, the Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder. Each such Bond shall be in compliance with the form which has been adopted by the Owner as its required form of payment or performance bond and shall be provided by a Surety company licensed to do business in the State of Connecticut and that is acceptable to the Owner, and is named in the current list of "Surety Companies Acceptable on Federal Bonds" as published in the "Treasury Department Circular 570". The Surety company's underwriting limitation, as further set forth in "Treasury Department Circular 570", must not be less than the full amount required by the bond itself. The amount of each bond shall be equal to One Hundred Percent (100%) of the Contract Sum. The Payment and Performance Bonds shall name as "Obligee" the University of Connecticut.

§ 11.4.1.1 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.4.1.2 Each surety bond and surety contract between the Contractor named as a principal on the bond and the surety that issued the bond shall contain the following language: "In the event that the surety assumes the contract or obtains a bid or bids for completion of the contract, the surety shall ensure that the contractor chosen to complete the contract is prequalified pursuant to section 4a-100 of the Connecticut General Statutes in the requisite classification and has the aggregate work capacity rating and single project limit necessary to complete the contract.

§ 11.4.2 If the Contractor or any of its subcontractors is a non-resident contractor, the Contractor and/or subcontractor shall comply with the requirements of Connecticut General Statutes Section 12-430(7) ("the statute"), to the extent applicable. If the Contractor is a verified contractor as defined in the statute, the Contractor shall provide to the Owner written verification of that status from the State Commissioner of Revenue Services. If the Contractor is a unverified contractor as defined in the statute, the Contractor shall provide to the Owner proof that the Contractor has posted with the Commissioner of Revenue Services a surety bond in an amount equal to five percent (5%) of the contract price and which is otherwise in compliance with the requirements of the statute.

§ 11.4.3 If the Contractor proposes a Subcontractor default coverage program, the Contractor must demonstrate a cost savings of no less than 18% as compared to the actual Subcontractor traditional bond cost, including a reasonable percentage for changes as agreed upon by the Owner.

### ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

#### § 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Owner Representative with the advice of the Architect has not specifically requested to examine prior to its being covered, the Owner Representative with the advice of the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

## § 12.2 CORRECTION OF WORK

### § 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Owner Representative with the advice of the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing, inspections, uncovering and replacement, and compensation for the Architect's and Owner Representative services made necessary thereby, shall be at the Contractor's expense.

If prior to the date of Substantial Completion, the Contractor, a Subcontractor or anyone from whom either is responsible uses or damages any portion of the Work, including, without limitation, mechanical, electrical, plumbing, and other building systems, machinery, equipment, or other mechanical device, the Contractor shall cause such item to be restored to "like new" condition at no expense to the Owner.

### § 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly at Contractor's sole expense after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4 or may exercise any other commercially reasonable remedies to compensate Owner for any expenses losses or damage caused by such nonconforming work.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

## § 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

## ARTICLE 13 MISCELLANEOUS PROVISIONS

### § 13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located.



## § 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to the other party hereto and to partners, successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

## § 13.3 WRITTEN NOTICE

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

## § 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

## § 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made at an appropriate time as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities having jurisdiction. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's and Owner Representative services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 INTEREST  
NOT USED.

§ 13.7 TIME LIMITS ON CLAIMS  
NOT USED.

## § 13.8 NON-DISCRIMINATION, AFFIRMATIVE ACTION, GOVERNOR'S EXECUTIVE ORDERS, AND OTHER MISCELLANEOUS PROVISIONS

§ 13.8.1 NONDISCRIMINATION. References in this section to "Contract" shall mean this Contract and references to "Contractor" shall mean the Contractor.

(a) For purposes of this Section, the following terms are defined as follows: (i) "Commission" means the Commission on Human Rights and Opportunities; (ii) "Contract" and "contract" include any extension or modification of the Contract or contract; (iii) "Contractor" and "contractor" include any successors or assigns of the Contractor or contractor; (iv) "Gender identity or expression" means a person's gender-related identity, appearance or behavior, whether or not that gender-related identity, appearance or behavior is different from that traditionally associated with the person's physiology or assigned sex at birth, which gender-related identity can be shown by providing evidence including, but not limited to, medical history, care or treatment of the gender-related identity, consistent and uniform assertion of the gender-related identity or any other evidence that the gender-related identity is sincerely held, part of a person's core identity or not being asserted for an improper purpose; (v) "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations; (vi) "good faith efforts" shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements; (vii) "marital status" means being single, married as recognized by the State of Connecticut, widowed, separated or divorced; (viii) "mental disability" means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders", or a record of or regarding a person as having one or more such disorders; (ix) "minority business enterprise" means any small contractor or supplier of materials fifty-one percent or more of the capital stock, if any, or assets of which is owned by a person or persons: (1) who are active in the daily affairs of the enterprise, (2) who have the power to direct the management and policies of the enterprise, and (3) who are members of a minority, as such term is defined in subsection (a) of Connecticut General Statutes § 32-9n; and (x) "public works contract" means any agreement between any individual, firm or corporation and the State or any political subdivision of the State other than a municipality for construction, rehabilitation, conversion, extension, demolition or repair of a public building, highway or other changes or improvements in real property, or which is financed in whole or in part by the State, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees.

For purposes of this Section, the terms "Contract" and "contract" do not include a contract where each contractor is (1) a political subdivision of the state, including, but not limited to, a municipality, (2) a quasi-public agency, as defined in Conn. Gen. Stat. Section 1-120, (3) any other state, including but not limited to any federally recognized Indian tribal governments, as defined in Conn. Gen. Stat. Section 1-267, (4) the federal government, (5) a foreign government, or (6) an agency of a subdivision, agency, state or government described in the immediately preceding enumerated items (1), (2), (3), (4) or (5).

(b) (1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the State of Connecticut; and the Contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by the Contractor that such disability prevents performance of the work involved; (2) the

Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Commission; (3) the Contractor agrees to provide each labor union or representative of workers with which the Contractor has a collective bargaining Agreement or other contract or understanding and each vendor with which the Contractor has a contract or understanding, a notice to be provided by the Commission, advising the labor union or workers' representative of the Contractor's commitments under this section and to post copies of the notice in conspicuous places available to employees and applicants for employment; (4) the Contractor agrees to comply with each provision of this Section and Connecticut General Statutes §§ 46a-68e and 46a-68f and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes §§ 46a-56, 46a-68e and 46a-68f; and (5) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor as relate to the provisions of this Section and Connecticut General Statutes § 46a-56. If the contract is a public works contract, the Contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works projects.

(c) Determination of the Contractor's good faith efforts shall include, but shall not be limited to, the following factors: The Contractor's employment and subcontracting policies, patterns and practices; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or efforts as the Commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.

(d) The Contractor shall develop and maintain adequate documentation, in a manner prescribed by the Commission, of its good faith efforts.

(e) The Contractor shall include the provisions of subsection (b) of this Section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with Connecticut General Statutes §46a-56; provided if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.

(f) The Contractor agrees to comply with the regulations referred to in this Section as they exist on the date of this Contract and as they may be adopted or amended from time to time during the term of this Contract and any amendments thereto.

(g) (1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or the State of Connecticut, and that employees are treated when employed without regard to their sexual orientation; (2) the Contractor agrees to provide each labor union or representative of workers with which such Contractor has a collective bargaining Agreement or other contract or understanding and each vendor with which such Contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the Contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment; (3) the Contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes § 46a-56; and (4) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor which relate to the provisions of this Section and Connecticut General Statutes § 46a-56.

(h) The Contractor shall include the provisions of the foregoing paragraph in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor

shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with Connecticut General Statutes § 46a-56; provided, if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.

§ 13.8.2 This Contract is subject to the provisions of **Executive Order No. 3 of Governor Thomas J. Meskill promulgated June 16, 1971**, concerning labor employment practices, **Executive Order No. Seventeen of Governor Thomas J. Meskill**, promulgated February 15, 1973, concerning the listing of openings and **Executive Order No. Sixteen of Governor John G. Rowland**, promulgated August 4, 1999, concerning violence in the workplace, all of which are incorporated into and are made a party of this Contract as if they had been fully set forth herein. At the Contractor's request, the Owner shall provide a copy of these orders to the Contractor. The Contract may also be subject to **Executive Order No. 7C of Governor M. Jodi Rell**, promulgated July 13, 2006, concerning contracting reforms and **Executive Order No. 14 of Governor M. Jodi Rell**, promulgated April 17, 2006, concerning procurement of cleaning products and services, in accordance with their respective terms and conditions.

### §13.8.3 ETHICS AND COMPLIANCE

In accordance with the Owner's compliance program, the Owner has in place an anonymous ethics and compliance reporting hotline service – 1-888-685-2637. Any person who is aware of unethical practices, fraud, violation of state laws or regulations or other concerns relating to Owner policies and procedures can report such matters anonymously. Such persons may also directly contact the Owner's compliance office at: Office of Audit, Compliance, and Ethics, 9 Walters Avenue, Unit 5084, Storrs, CT 06269-5084; Phone 860-486-4526; Fax 860-486-4527. As a provider of goods and/or services to the Owner, you are hereby required to notify your employees, as well as any subcontractors, who are involved in the implementation of this contract, of this reporting mechanism.

### §13.8.4 CAMPAIGN CONTRIBUTION RESTRICTIONS

For all State contracts as defined in P.A. 10-1 having a value in a calendar year of \$50,000 or more or a combination or series of such agreements or contracts having a value of \$100,000 or more, the authorized signatory to this Contract expressly acknowledges receipt of the State Elections Enforcement Commission's notice advising state contractors of state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice (SEEC Form 11) below:

**SEEC FORM 11**  
**CONNECTICUT STATE ELECTIONS ENFORCEMENT COMMISSION**  
Rev. 1/11

**NOTICE TO EXECUTIVE BRANCH STATE CONTRACTORS AND  
PROSPECTIVE STATE CONTRACTORS OF CAMPAIGN CONTRIBUTION  
AND SOLICITATION LIMITATIONS**

This notice is provided under the authority of Connecticut General Statutes §9-612(g)(2), as amended by P.A. 10-1, and is for the purpose of informing state contractors and prospective state contractors of the following law (italicized words are defined on the reverse side of this page).

**CAMPAIGN CONTRIBUTION AND SOLICITATION  
LIMITATIONS**

*No state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor*, with regard to a *state contract* or *state contract solicitation* with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee (which includes town committees).

In addition, no holder or principal of a holder of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for

nomination or election to the office of State senator or State representative, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

On and after January 1, 2011, no state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor, with regard to a state contract or state contract solicitation with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall **knowingly solicit** contributions from the state contractor's or prospective state contractor's employees or from a *subcontractor or principals of the subcontractor* on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor,

Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

### **DUTY TO INFORM**

State contractors and prospective state contractors are required to inform their principals of the above prohibitions, as applicable, and the possible penalties and other consequences of any violation thereof.

### **PENALTIES FOR VIOLATIONS**

Contributions or solicitations of contributions made in violation of the above prohibitions may result in the following civil and criminal penalties:

**Civil penalties**—Up to \$2,000 or twice the amount of the prohibited contribution, whichever is greater, against a principal or a contractor. Any state contractor or prospective state contractor which fails to make reasonable efforts to comply with the provisions requiring notice to its principals of these prohibitions and the possible consequences of their violations may also be subject to civil penalties of up to \$2,000 or twice the amount of the prohibited contributions made by their principals.

**Criminal penalties**—Any knowing and willful violation of the prohibition is a Class D felony, which may subject the violator to imprisonment of not more than 5 years, or not more than \$5,000 in fines, or both.

### **CONTRACT CONSEQUENCES**

In the case of a state contractor, contributions made or solicited in violation of the above prohibitions may result in the contract being voided.

In the case of a prospective state contractor, contributions made or solicited in violation of the above prohibitions shall result in the contract described in the state contract solicitation not being awarded to the prospective state contractor, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

The State shall not award any other state contract to anyone found in violation of the above prohibitions for a period of one year after the election for which such contribution is made or solicited, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

Additional information may be found on the website of the State Elections Enforcement Commission, [www.ct.gov/seec](http://www.ct.gov/seec). Click on the link to "Lobbyist/Contractor Limitations."

### **DEFINITIONS**

"State contractor" means a person, business entity or nonprofit organization that enters into a state contract. Such person, business entity or nonprofit organization shall be deemed to be a state contractor until December thirty-first of the year in which such contract terminates. "State contractor" does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.



“Prospective state contractor” means a person, business entity or nonprofit organization that (i) submits a response to a state contract solicitation by the state, a state agency or a quasi-public agency, or a proposal in response to a request for proposals by the state, a state agency or a quasi-public agency, until the contract has been entered into, or (ii) holds a valid prequalification certificate issued by the Commissioner of Administrative Services under section 4a-100. “Prospective state contractor” does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person’s capacity as a state or quasi-public agency employee.

“Principal of a state contractor or prospective state contractor” means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a state contractor or prospective state contractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a state contractor or prospective state contractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a state contractor or prospective state contractor, which is not a business entity, or if a state contractor or prospective state contractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any state contractor or prospective state contractor who has *managerial or discretionary responsibilities with respect to a state contract*, (v) the spouse or a *dependent child* who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the state contractor or prospective state contractor.

“State contract” means an agreement or contract with the state or any state agency or any quasi-public agency, let through a procurement process or otherwise, having a value of fifty thousand dollars or more, or a combination or series of such agreements or contracts having a value of one hundred thousand dollars or more in a calendar year, for (i) the rendition of services, (ii) the furnishing of any goods, material, supplies, equipment or any items of any kind, (iii) the construction, alteration or repair of any public building or public work, (iv) the acquisition, sale or lease of any land or building, (v) a licensing arrangement, or (vi) a grant, loan or loan guarantee. “State contract” does not include any agreement or contract with the state, any state agency or any quasi-public agency that is exclusively federally funded, an education loan, a loan to an individual for other than commercial purposes or any agreement or contract between the state or any state agency and the United States Department of the Navy or the United States Department of Defense.

“State contract solicitation” means a request by a state agency or quasi-public agency, in whatever form issued, including, but not limited to, an invitation to bid, request for proposals, request for information or request for quotes, inviting bids, quotes or other types of submittals, through a competitive procurement process or another process authorized by law waiving competitive procurement.

“Managerial or discretionary responsibilities with respect to a state contract” means having direct, extensive and substantive responsibilities with respect to the negotiation of the state contract and not peripheral, clerical or ministerial responsibilities.

“Dependent child” means a child residing in an individual’s household who may legally be claimed as a dependent on the federal income tax of such individual.

“Solicit” means (A) requesting that a contribution be made, (B) participating in any fund-raising activities for a candidate committee, exploratory committee, political committee or party committee, including, but not limited to, forwarding tickets to potential contributors, receiving contributions for transmission to any such committee or bundling contributions, (C) serving as chairperson, treasurer or deputy treasurer of any such committee, or (D) establishing a political committee for the sole purpose of soliciting or receiving contributions for any committee. Solicit does not include: (i) making a contribution that is otherwise permitted by Chapter 155 of the Connecticut General Statutes; (ii) informing any person of a position taken by a candidate for public office or a public official, (iii) notifying the person of any activities of, or contact information for, any candidate for public office; or (iv) serving as a member in any party committee or as an officer of such committee that is not otherwise prohibited in this section.

“Subcontractor” means any person, business entity or nonprofit organization that contracts to perform part or all of the obligations of a state contractor’s state contract. Such person, business entity or nonprofit organization shall be deemed to be a subcontractor until December thirty first of the year in which the subcontract terminates. “Subcontractor” does not include (i) a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or (ii) an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person’s capacity as a state or quasi-public agency employee.

“Principal of a subcontractor” means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a subcontractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a subcontractor, which is a business

entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a subcontractor, which is not a business entity, or if a subcontractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any subcontractor who has managerial or discretionary responsibilities with respect to a subcontract with a state contractor, (v) the spouse or a dependent child who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the subcontractor.

#### **§ 13.8.5 WHISTLEBLOWING:**

This Contract is subject to the provisions of § 4-61dd of the Connecticut General Statutes. In accordance with this statute, if an officer, employee or appointing authority of the Contractor takes or threatens to take any personnel action against any employee of the Contractor in retaliation for such employee's disclosure of information to any employee of the Contracting state or quasi-public agency or the Auditors of Public Accounts or the Attorney General under the provisions of subsection (a) of such statute, the Contractor shall be liable for a civil penalty of not more than five thousand dollars for each offense, up to a maximum of twenty per cent of the value of this Contract. Each violation shall be a separate and distinct offense and in the case of a continuing violation, each calendar day's continuance of the violation shall be deemed to be a separate and distinct offense. The Owner may request that the Attorney General bring a civil action in the Superior Court for the Judicial District of Hartford to seek imposition and recovery of such civil penalty. In accordance with subsection (f) of such statute, each large state Contractor, as defined in the statute, shall post a notice of the provisions of the statute relating to large state Contractors in a conspicuous place which is readily available for viewing by the employees of the Contractor.

#### **§ 13.8.6 COMPLIANCE WITH OWNER POLICIES AND GUIDELINES**

At a minimum, the Contractor shall comply with established Owner policies and guidelines, which have been previously provided to bidders and/or are available for review upon request. These policies are hereby incorporated by reference herein, including but not limited to: Policies on Lockout/Tagout; Confined Space Entry as referenced in the Contractor's Environmental Health and Safety Manual; Code of Conduct; Sexual Harassment; Racism and Acts of Intolerance; Smoking.

#### **§ 13.9 PREFERENCE IN EMPLOYMENT**

§ 13.9.1 In the employment of labor to perform the work specified herein, preference shall be given to citizens of the United States, who are, and continuously for three months prior to the date hereof have been residents of the labor market areas, as established by the Labor Commissioner in which said work is to be done; and if no such qualified persons are available, then to citizens who have continuously resided in the county in which the work is to be performed for at least three months prior to the date hereof and then to citizens of the State who have continuously resided in the State at least three months prior to the date hereof. In no event shall said provisions be deemed to abrogate or supersede in any manner any provision regarding residence requirements contained in a Collective Bargaining Agreement to which the Contractor is a party.

#### **§ 13.10 MINIMUM WAGE RATES**

§ 13.10.1 If this project involves new construction of a building or other structure or improvement and the total cost of all Work to be performed by Contractors and Subcontractors is \$400,000 or more or if the project involves remodeling, refurbishing, rehabilitation, alteration or repair of a building or other structure or improvement and such total cost is \$100,000 or more then:

- .1 The wages paid on an hourly basis to any mechanic, laborer or workman employed upon the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such employee to any employee welfare fund as defined in Subsection (i) of Section 31-53 of the Connecticut General Statutes shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the town in which such project is being constructed. Any Contractor who is not obligated by agreement to make payment or contribution on behalf of such employees to any such employee welfare fund shall pay to each employee as part of his wages the amount of payment or contribution for his classification on each payday.

§ 13.10.2 The State of Connecticut Labor Department Wage Schedule where required shall be provided with these documents typically with the Bidding Documents, or will be incorporated in the Contract Documents as an Addendum. The Contractor agrees to accept the current prevailing wage scale as well as any annual adjustment to the prevailing wage scale as provided by the Connecticut Department of Labor. Wage Rates will be posted each July 1st on the Department of Labor's website: [www.ctdol.state.ct.us](http://www.ctdol.state.ct.us). Such prevailing wage adjustment will not be

considered a basis for an annual contract amendment. The schedule is deemed to reflect customary or prevailing wages for this project and is hereby incorporated and made a part of the Contract Documents. Wage Rates shall be paid pursuant to Sections 31-53 and 31-54 of the Connecticut General Statutes and any regulations issued there under.

### **§ 13.11 HOURS OF LABOR PERMITTED**

§ 13.11.1 Pursuant to Section 31-57 of the Connecticut General Statutes, no person shall be employed to work or be permitted to work more than eight hours in any day or more than forty hours in any week on any work provided for in the Contract. The operation of such limitation of hours of work may be suspended during an emergency upon the approval of the Owner Representative.

### **§ 13.12 EXAMINING AND COPYING CONTRACTOR'S RECORDS**

§ 13.12.1 The Contractor shall permit the Owner or its duly authorized representative to examine and copy books and records of the Contractor relative to charges for extra work, alleged breaches of contract, settlement of claims, or any other matter involving the Contractor's demand for added compensation from the Owner. The Contractor shall also permit such examination and copying of his records as the Owner may deem necessary, excepting papers and records preceding the execution of the Contract that are not a matter of record with the Owner, in order to determine that the Contractor has complied with all laws and regulations pertaining to the Contract, such as but not limited to Labor Compliance, Affirmative Action Program and Equal Employment Opportunity.

§ 13.12.2 The Contractor further agrees that he shall keep all records relating to this Contract until the expiration of six (6) years after final payment under this Contract is made, or six (6) months after settlement of any disputes whichever may be later.

§ 13.12.3 The Contractor further agrees that he and his Subcontractors shall permit the Owner, at its own expense, by its duly authorized representatives, to inspect and audit all their data, records and files pertaining to this Contract.

### **§ 13.13 SYSTEM LAYOUT DRAWING**

§ 13.13.1 System layouts indicated on the on the drawings are generally diagrammatic and locations and arrangements of items are approximate. Exact routing of conduit, wiring, location of fixtures, outlets, panels, piping, valves and all other equipment shall be governed by the structural conditions and obstructions. The entire layout shall be followed as closely as possible and the right is reserved by the Owner to reasonably change the locations to accommodate any conditions which may arise during the progress of the work without additional compensation to the Contractors.

### **§ 13.14 GUARANTY OF PERFORMANCE**

§ 13.14.1 If the Contractor has submitted the financial statement of a parent or other affiliated entity in its Proposers Qualification Statement, or if pre-qualified, its application for pre-qualification and has also indicated in that submission that such parent or affiliate will guarantee the performance of the Contract, then the parent or affiliate shall execute, simultaneously, with the Contractor's execution of the Contract, a Guaranty in a form provided by and acceptable to the Owner.

### **§ 13.15 JOINT VENTURE**

§ 13.15.1 If the Contractor is a joint venture, each joint venture partner shall be jointly, severally and individually responsible to the Owner for the performance of any and all obligations of the Contractor encompassed by this contract or as required by applicable law, and each joint venture partner shall be jointly, severally and individually liable to the Owner for any failures to perform such obligations in accordance with the contract or applicable law. In its dealings with the Owner, each joint venture partner shall have full authority to act in behalf of and bind the joint venture and any other joint venture partner. Each joint venture partner shall be considered to be the agent of the joint venture and of any other joint venture partner.

### **§ 13.16 WORKER GEOGRAPHIC DISTRIBUTION**

§ 13.16.1 If the Project is a Covered Project (as defined hereinafter), the Contractor shall comply with the provisions of this Section 13.16.

§ 13.16.2 The Contractor shall submit to the Owner a plan for encouraging the hiring of Workers (as defined hereinafter) with Residence (as defined hereinafter) in the State of Connecticut.



§13.16.3 Following the close of each Quarter (as defined hereinafter), the Contractor shall submit a Worker Geographic Distribution Report (as defined hereinafter) to the Owner in a form satisfactory to the Owner. The “Worker Geographic Distribution Report” is a report that shall provide the following information for each Worker paid, during the most recently closed Quarter, for work on the Project:

- .1 The numbers of hours of Project work for which such Worker was paid during such Quarter.
- .2 The Wages (as defined hereinafter) paid to such Worker during such Quarter.
- .3 The Residence of such Worker as of the close of such Quarter.

§13.16.4 The Worker Geographic Distribution Report shall not contain any personally identifiable information about a Worker.

§13.16.5 The following terms shall have the meaning assigned below for the purposes of this Section 13.16.

- .1 “Covered Project” is a project that is both subject to Section 31-53(a) of the Connecticut General Statutes and for which the total cost of all work to be performed by all contractors and subcontractors is \$1,000,000 or greater.
- .2 “Quarter” means a calendar quarter of each calendar year.
- .3 “Residence” is the state and town in which a Worker resides, as reflected in the payroll records of such Worker’s employer.
- .4 “Subcontractor” is any subcontractor or sub-subcontractor of the Contractor, which subcontractor or sub-subcontractor employs Workers on the Project.
- .5 “Wages” are the wages that are subject to Section 31-53(a) of the Connecticut General Statutes (including any amounts paid to an employee welfare fund).
- .6 “Worker” is an employee of the Contractor or a Subcontractor (as defined hereinabove), which employee is working on the Project and whose wages for such work is subject to Section 31-53(a) of the Connecticut General Statutes.

## ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

### § 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of sixty (60) consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped; or
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped.
- .3 Not Used.
- .4 Not Used.

§ 14.1.2 Not Used.

§ 14.1.3 If one of the reasons described in Section 14.1.1 exists, the Contractor may, upon seven (7) days’ written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed and for proven loss with respect to materials, equipment, tools, and construction equipment and machinery.

§ 14.1.4 If the Work is stopped for a period of sixty (60) consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner’s obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven (7) additional days’ written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

### § 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may, without prejudice to or waiving any other right or remedy of the Owner, terminate the Contract if the Contractor

- .1 refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority;
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents;
- .5 Fails to furnish the Owner with assurances satisfactory to the Owner evidencing the Contractor's ability to complete the Work in compliance with all requirements of the Contract Documents;
- .6 Refuses or fails to prosecute the Work or any separable part, with the diligence that will insure its completion within the time specified in this Contract including any duly authorized extension, or fails to complete the Work within said period; or
- .7 Fails to comply with laws, rules, regulations, or directives regarding job site safety; or to comply with the provisions of the Owner's Contractor Environmental Health and Safety Manual, or orders or directives regarding safety issued by the Owner pursuant to the Contract.

§ 14.2.2 When any of the above reasons exist, the Owner, with advice of the Architect and upon certification by the Initial Decision Maker, determines that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven (7) days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4;
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work; and
- .4 Terminate the Contractor's right to proceed with a separate part of the Work if the Owner so elects.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be retained by the Owner. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Architect and Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

#### § 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause and without prejudice to or waiving any other right or remedy of the Owner, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

#### § 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, without prejudice or waiving any other right or remedy of the Owner, terminate the Contract in whole or in part for the Owner's convenience and without cause. Termination by the Owner under this Section shall be by a Notice of Termination delivered to the Contractor specifying the extent of termination and the effective date.

§ 14.4.2 Upon receipt of a Notice of Termination for convenience, the Contractor shall immediately, in accordance with instructions from the Owner, proceed with performance of the following duties regardless of delay in determining or adjusting amounts due under this Section:

- .1 Cease operations as specified in the notice;
- .2 Place no further orders and enter into no further Subcontracts for materials, labor, services or facilities except as necessary to complete continued portions of the Contract;
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.
- .4 Proceed to complete the performance of Work not terminated;
- .5 Take actions that may be necessary or that the Owner may direct for the protection and preservation of the terminated Work.

§ 14.4.3 Upon such termination, the Contractor shall recover as its sole remedy, payment for Work properly performed in connection with the terminated portion of the Work prior to the effective date of termination and for items properly and timely purchased or fabricated off the Project site, delivered and stored in accordance with the Owner's instructions plus demobilization costs. The Contractor hereby waives and forfeits all other claims for payment and damages, including without limitation, anticipated profits.

§14.4.4 The Owner shall be credited for (1) payments previously made to the Contractor for the terminated portion of the Work; (2) claims which the Owner has against the Contractor under the Contract and (3) the value of the materials, supplies, equipment or other items that are to be disposed of by the Contractor that are part of the Contract Sum.

§14.4.5 The payment to the Contractor pursuant to this Section may not exceed the total Contract Price as reduced by:

- .1 The amount of payments previously made
- .2 The Contract price of work not terminated.

## ARTICLE 15 CLAIMS AND DISPUTES

### § 15.1 CLAIMS

#### § 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, extension or time, and/or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

#### § 15.1.2 NOTICE OF CLAIMS

Claims by the Contractor must be initiated by written notice to the Owner Representative as described in Section 1.1.1.1 and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by the Contractor must be initiated within twenty-one (21) days after occurrence of the event giving rise to such Claim or within fourteen (14) days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims may also be reserved by the Contractor in writing within the time limits set forth in this Section 15.1.2. If a Claim is reserved, the Resolution of Claims and Disputes procedures described in Article 15 shall not commence until a written notice from the Contractor is received by the Owner Representative. No such claim shall be valid unless so made. Any notice of Claim or reservation of Claim must clearly identify the alleged cause and the nature of the Claim and include data and information then available to the claimant that will facilitate prompt verification and evaluation of the Claim.

#### § 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

#### § 15.1.4 CLAIMS FOR ADDITIONAL COST

§ 15.1.4.1 If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.4.2 If the Contractor believes additional cost is involved for reasons including but not limited to (1) a written interpretation from the Architect, (2) an order by the Owner to stop the Work where the Contractor was not at fault, (3) a written order for a minor change in the Work issued by the Architect, (4) failure of payment by the Owner, (5) termination of the Contract by the Owner, (6) Owner's suspension or (7) other reasonable grounds, Claim shall be made in accordance with the provisions of this Article 15.

#### § 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. No such claim shall be valid unless made in accordance with the provisions of this Article 15. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

#### § 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES NOT USED.

§ 15.1.7 Injury or Damage to Person or Property. If the Contractor suffers injury or damage to person or property because of an act or omission of the Owner Representative, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding twenty-one (21) days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 15.1.8 Claims for Concealed or Unknown Conditions: If, upon or subsequent to the Contractor's and its Subcontractors' site visits and performance of the tests, examinations and inspections required by Section 3.2.2, the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor will promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 5 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different in the respects noted above and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. Any claim by the Contractor in opposition to such determination must be made within 21 days after the Architect has given notice of the recommendation. The Owner Representative will have the final authority to accept or reject the Architect's recommendations, which decision by the Owner Representative shall be subject to further proceedings pursuant to Article 15.

#### § 15.2 INITIAL DECISION

§ 15.2.1 Claims by the Contractor, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the AIA 101-2007 Section 6.1 of the Contract. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, regardless of (1) whether such matters relate to execution and progress of the Work, or (2) the extent to which the Work has been completed. The decision by the Initial Decision Maker in response to a Claim shall not be a condition precedent to arbitration or litigation in the event (1) the position of Initial Decision Maker is vacant, (2) the Contractor has not provided evidence or (3) the Initial Decision Maker has failed to take action required under Section 15.2.2 within thirty (30) days after the Claim is made.

§ 15.2.2 The Initial Decision Maker will review Claims by the Contractor and within thirty (30) days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims of the Contractor, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim of the Contractor or to furnish additional supporting data, such party shall respond, within ten (10) days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.4.1 If a Claim of the Contractor has not been resolved after consideration of the foregoing, the Initial Decision Maker will render a written decision on the claim, including any change in the Contract Sum or Contract Time or both, which decision shall be final and binding but subject to meeting and mediation pursuant to Section 15.3 of this document and arbitration or litigation pursuant to Connecticut General Statutes Section 4-61 and Section 15.4 of this Contract to the extent applicable.

§ 15.2.5 NOT USED.

§ 15.2.6 NOT USED.

§ 15.2.6.1 NOT USED.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 NOT USED.

### § 15.3 MEDIATION

§ 15.3.1 Claims of the Contractor except those waived as provided for in Section 9.10.5 shall be submitted to the meeting and mediation process described in the Sections which follow, prior to and as a precondition to the Contractor pursuing any other available remedy. Claims by the Owner, at the option of the Owner, may be submitted to such meeting process and/or mediation process, and, in such event, Contractor shall be required to submit to and participate in such a meeting and/or mediation. The meeting shall be between the parties and attended by individuals with decision-making authority regarding the dispute, to attempt in good faith to negotiate a resolution of the dispute.

§ 15.3.2 The meeting referenced in Section 15.3.1 shall be held promptly, but not less than fourteen (14) calendar days after a party's request for the meeting. The Contractor shall not submit any claim to mediation in accordance with the provisions of Sections 15.3.1 through 15.3.6 until fourteen (14) calendar days after the date of the meeting.

§ 15.3.3 In connection with any such mediation, a request for mediation shall be made in writing, delivered to the other party to the Contract. The request may be made concurrently with the filing of applicable binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of sixty (60) calendar days from the date of filing, unless stayed for a different period of time by agreement of the parties or as modified by court order.



§ 15.3.4 The parties will jointly appoint a mutually acceptable mediator, seeking assistance in such regard from a mutually agreed upon dispute resolution entity if they have been unable to agree upon such appointment within twenty (20) calendar days from the submittal of the request for mediation. If the parties are unable to agree on the dispute resolution entity, the mediation shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of this Contract.

§ 15.3.5 The parties agree to participate in good faith in the mediation and negotiations related thereto for a period of sixty (60) calendar days from the date of submittal, or until the parties reach impasse as evidenced by a letter from a party to the mediator, whichever first occurs. If the parties are not successful in resolving the dispute through mediation, then the parties may pursue other legal remedies available to them.

§ 15.3.6 Should the Owner request, the Contractor agrees to participate as a party in any mediation proceeding between the Owner and the Architect or other Consultant for the Project in which construction deficiencies, contract breaches, or other alleged wrongful acts by the Contractor are alleged.

#### § 15.4 ARBITRATION OR LITIGATION OF CLAIMS

§ 15.4.1 NOT USED.

§ 15.4.1.1 NOT USED.

§ 15.4.2 NOT USED.

§ 15.4.3 NOT USED.

§ 15.4.4 Should the Owner have a claim against the Contractor, the parties agree that the Owner, whether or not it elects to proceed with the meeting process or mediation described in Section 15.3, shall have the option of either prosecuting the claim against the Contractor in an appropriate court of general jurisdiction, or by arbitrating the claim by filing a demand for arbitration pursuant to the rules of a dispute resolution entity agreed upon by the parties, except that if the parties cannot agree upon a dispute resolution entity, the rules of the American Arbitration Association shall apply.

§ 15.4.5 Should the Contractor have a claim against the Owner which has not been resolved by mediation or any other procedure set forth in this Contract, the Contractor's rights to assert its claim against the Owner shall be subject to the provisions of Connecticut General Statutes Section 4-61.

#### § 15.4.6 CONSOLIDATION OR JOINDER

§ 15.4.6.1 Should either the Contractor institute an arbitration to the extent authorized by Section 4-61 of the Connecticut General Statutes or the Owner institute an arbitration as set forth herein, the Contractor agrees that any such arbitration may be consolidated, at the Owner's discretion, with any arbitration proceeding involving the Owner and the Architect or other Consultant for the Project in which construction or design deficiencies, breaches of contract, or any other alleged wrongful acts by the Contractor or Architect are alleged.

§ 15.4.6.2 NOT USED.

§ 15.4.6.3 NOT USED.

#### ARTICLE 16 CODE OF CONDUCT

##### § 16.1 CODE OF CONDUCT

§ 16.1.1 In furtherance of its longstanding commitment to fundamental human rights, to the dignity of all people, and to the environment, the Owner has developed the Code of Conduct for University of Connecticut Vendors (the "Vendor Code of Conduct"). The Contractor hereby acknowledges receipt of the Vendor Code of Conduct. A copy of the Vendor Code of Conduct is available at <http://csr.uconn.edu/>. The Vendor Code of Conduct is hereby incorporated herein by reference to the extent the Contractor is required to comply with the same pursuant to this section.

The Contractor agrees to comply with the "Principal Expectations" described in the Vendor Code of Conduct. The Contractor further agrees to comply with the "Preferential Standards" described in the Vendor Code of Conduct, to the extent a commitment to so comply, or a representation of compliance, was provided by the Contractor to the

Owner in writing. Any such commitment or representation is hereby incorporated herein by reference. The Contractor agrees to provide the Owner with such evidence of Contractor's compliance with this section as the Owner reasonably requests and to, at the request of the Owner, provide a comprehensive, annual summary report of the Contractor's corporate social and environmental practices.

#### ARTICLE 17 BACKGROUND CHECKS

§ 17.1 The Contractor warrants that it will not assign any employee, independent contractor or agent to perform services under this Contract unless that employee, independent contractor or agent has satisfactorily completed a background check and is deemed suitable by the Contractor for performing such services on a college campus attended and inhabited by students. The background check must minimally include criminal arrest information for the past seven years, a check of the national and state sex offender registries and a social security number verification. All fees associated with the background checks shall be the responsibility of the Contractor. The Contractor shall immediately remove any employee, independent contractor or agents performing services under this Contract on campus if it becomes known to the Contractor that such person may be a danger to the health or safety of the campus community, or at the request of the University based on a concern of community or individual safety.

§ 17.2 Without limiting the obligations of the Contractor under § 3.18 of this Contract, the Contractor shall defend, indemnify and hold harmless the state of Connecticut, the University of Connecticut and all of their employees, agents and/or assigns for any claims, suits or proceedings resulting from a breach of the foregoing warranty and/or that are caused in whole or in part by the actions or omissions of the Contractor, its employees, or other persons that the Contractor causes to be on the campus.

#### ARTICLE 18 UNIVERSITY POLICIES

The Contractor shall, at no additional cost to the University, comply with all policies and procedures of the University. In the event the University establishes new policies or procedures following execution of the contract, or makes modifications to policies or procedures in existence at the time of contract execution, the Contractor shall comply with such new or modified policies or procedures upon written notice.

#### ARTICLE 19 SOVEREIGN IMMUNITY

§ 19.1 The parties acknowledge and agree that nothing in this Contract shall be construed as a waiver by the State of Connecticut or the Owner of any rights or defenses of sovereign immunity, which it may have had, now has, or will have with respect to all matters arising out of this Contract. To the extent that this provision conflicts with any other provision hereunder, this provision shall govern.

This document acknowledging agreement to the General Conditions contained herein is entered into as of \_\_\_\_\_, 2014 and is executed in at least three originals, of which one is to be delivered to the Contractor, one to the Architect for use in the administration of the Contract, and the remainder to the Owner.

OWNER (Signature)

\_\_\_\_\_, Executive VP for  
Administration & CFO

Duly Authorized: CGS §§ 10a-104 and 10a-108  
(Printed name and title)

Date: \_\_\_\_\_

CONTRACTOR (Signature)

« Duly Authorized »« »  
(Printed name and title)

Date: \_\_\_\_\_

**APPROVED AS TO FORM:**

\_\_\_\_\_  
Assistant/Associate Attorney General

Date Signed: \_\_\_\_\_

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**PROJECT SPECIFICATIONS**  
**FOR**  
**STUDENT UNION**  
**SENIOR SQUARE**

**UNIVERSITY OF CONNECTICUT**  
**STORRS CAMPUS**  
**Storrs, Connecticut**

**PROJECT NUMBER: #201642**

**UConn**

**UNIVERSITY OF CONNECTICUT**

Prepared by:

Office of University Planning  
University of Connecticut  
31 LeDoyt Road, Unit 3038  
Storrs, Connecticut

April 3, 2015

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**DIVISION 01 GENERAL REQUIREMENTS**

**SECTION 01 00 00 – TABLE OF CONTENTS**

01 10 00 – SUMMARY  
01 22 00 – UNIT PRICES  
01 23 00 - ALTERNATES  
01 25 00 – SUBSTITUTION PROCEDURES  
01 26 00 – CONTRACT MODIFICATION PROCEDURES  
01 31 00 – PROJECT MANAGEMENT AND COORDINATION  
01 32 00 – CONSTRUCTION PROGRESS DOCUMENTATION  
01 32 33 – PHOTOGRAPHIC DOCUMENTATION  
01 33 00 – SUBMITTAL PROCEDURES  
01 40 00 – QUALITY REQUIREMENTS  
01 50 00 – TEMPORARY FACILITIES AND CONTROLS  
01 56 40 – TREE PROTECTION AND PRESERVATION  
01 57 13 – TEMPORARY EROSION AND SEDIMENTATION CONTROLS  
01 57 14 – TEMPORARY DUST CONTROL  
01 57 19 – TEMPORARY ENVIORNMENTAL CONTROLS  
01 58 13 – PROJECT IDENTIFICATION AND SIGNAGE  
01 60 00 – PRODUCT REQUIREMENTS  
01 61 00 – UNIVERSITY PRODUCT STANDARDS  
01 71 23 – FIELD ENGINEERING  
01 73 00 – EXECUTION  
01 77 00 – CLOSEOUT PROCEDURES  
01 78 39 – PROJECT RECORD DOCUMENTS

**DIVISION 02 - EXISTING CONDITIONS**

02 32 19 – EXPLORATORY EXCAVATIONS  
02 41 23 – SITE DEMOLITION  
02 44 00 – CONTROL OF EXISTING FLOWS  
02 61 00 – REMOVAL AND DISPOSAL OF REGULATED SOILS

**DIVISION 12 – FURNISHINGS**

12 93 00 – SITE FURNISHINGS

**DIVISION 31 – EXTERIOR IMPROVEMENTS**

31 11 00 – CLEARING AND GRUBBING  
31 23 10 – EARTHWORK

**DIVISION 32 – EXTERIOR IMPROVEMENTS**

32 13 13 – LANDSCAPE CONCRETE PAVING  
32 13 73 – CONCRETE PAVING JOINT SEALANTS

32 14 00 – UNIT PAVING  
32 91 19 – LANDSCAPE GRADING  
32 92 00 – LAWNS AND GRASSES  
32 93 00 – TREES, PLANTS AND GROUNDCOVERS

**DRAWING LIST**

	Cover
L100	Site Logistics and Notes
L200	Site Plans
L300	Details

SECTION 01 10 00 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Work under separate contracts.
4. Time of Completion.
5. Access to site and Contractor Parking.
6. Coordination with occupants.
7. Work restrictions.
8. Work Sequence.
9. Miscellaneous provisions.

B. Related Requirements:

1. Division 01 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.
2. Division 01 Section "Submittal Procedures" for submittal requirements prior to start of work.

1.3 PROJECT INFORMATION

A. Project Identification: Student Union Senior Square, project number 201462.

1. Project Location: Student Union, 2110 Hillside Road, Storrs, Connecticut.

B. Owner: University of Connecticut

1. Owner's Representative / Landscape Architect:

UConn Planning, Architectural & Engineering Services  
31 LeDoyt Road, Unit 3038  
Storrs, CT 06269  
Ian Dann, PLA, ASLA  
860-486-6503

#### 1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:
1. The intent of this project is to improve the appearance of the central entrance at the Student Union. Currently the area is turf and annual plantings. The proposed project includes
    - a. Removal of plantings
    - b. Unit pavers with sand setting bed over concrete base
    - c. Sodded lawn
    - d. Plantings
    - e. Concrete work
    - f. Campus standard benches
  2. Protection for the public, building, grounds from damage during this contract is the responsibility of the Contractor for this project at all times.
  3. Repair or replace landscaping including trees, shrubs or other planting disturbed during the Work of the contract with new to match existing, unless otherwise noted. Regrade and reseed any grass area damaged as a result of the Work. Repair any walkways or paved areas damaged as a result of the Work.

#### 1.5 WORK UNDER SEPARATE CONTRACTS

- A. General: Cooperate fully with contractors that may have been issued separate contract(s) to perform certain construction operations at the site prior to construction activity under this contract so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under separate contracts.

#### 1.6 TIME OF COMPLETION

- A. Work required by the project shall commence no earlier than May 12, 2015 and upon receipt of a Notice to Proceed. However, all physical work on site must be completed prior to August 15, 2015.
1. The successful bidder shall obtain the Certificate of Substantial Completion as defined in the Contract Documents within 30 calendar days of the Notice to Proceed.
  2. Due to the nature of this institution, it is required that the academic schedule must be maintained. Contractor shall cooperate and coordinate with the University to assure that the academic schedule will be maintained.
  3. No Work may be conducted during University exam periods without the written permission from the University Representative. Exam periods which may affect this project are scheduled per attached link: <http://www.registrar.uconn.edu/calendar.htm>

1.7 ACCESS TO SITE

- A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- B. Use of Site: Limit use of Project site to areas indicated; allow for Owner occupancy and use by the public. Do not disturb portions of Project site beyond areas in which the Work is indicated.
  - 1. Limits: Confine construction operations to areas within Contract Limits indicated. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
  - 2. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
    - a. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
  - 3. Burial of Waste Materials: No not dispose of organic and hazardous material on site, either by burial or by burning.
  - 4. All grounds including construction site within contract limit shall be kept neat and orderly at all times.
- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weather tight condition throughout construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.
- D. Contractor's Parking: Contractors working for the University of Connecticut at the regional campus will work with the University Representative to determine where contractors are allowed to park during the course of the Project.
  - 1. Construction vehicles may park within the fenced construction area. Personal vehicles are not considered construction vehicles.
  - 2. Restore all lawn, sidewalk, paved areas damaged by vehicles and or construction activities to their original condition.
  - 3. Contractors working for the University of Connecticut at Storrs Campus are required to obtain a parking permit through the Parking Services Office. For additional information please contact the Parking Services Office at 860-486-4930. The Contractor is responsible for payment of all fees for parking permits. Parking fees may be prorated monthly.
    - a. The University will provide a maximum of three (3) contract parking places in the vicinity of the work. Additional parking required by the Contractor will be designated at a location specified by the Owner's Representative.
    - b. Construction vehicles are exempt from this requirement.
- E. Contractor shall restrict use of construction related trucks on local roads, such as Hillyndale, Eastwood and Westwood Road.
- F. Refer to Section 01-3300 Par 2.1.L Safety Plan for submittal requirements prior to site access

## 1.8 COORDINATION WITH OCCUPANTS

- A. Full Owner Occupancy: Owner will occupy site and building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
  2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.
- B. Partial Owner Occupancy: The Owner reserves the right to occupy and to place and install equipment in completed areas of the building, prior to Substantial Completion provided that such occupancy does not interfere with completion of the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.
1. A Certificate of Substantial Completion will be executed for each specific portion of the Work to be occupied prior to Owner occupancy.
  2. This project has been identified as a Threshold Building subject to the requirements of Connecticut General Statutes Section 29-276b. Obtain a Certificate of Occupancy from Building Officials prior to Owner occupancy.
  3. Certifications. The Contractor at completion of construction shall provide to the University a "Certificate of Substantial Compliance with the State Building and Fire Safety Codes" bearing original signatures of an officer of the company stating: "This is the CERTIFY that in my professional opinion the complete structure/renovations described above is in substantial compliance with the approved construction documents on file with the University of Connecticut. Minor deviations and special stipulations are noted below (if any)".
  4. Prior to partial Owner occupancy, mechanical and electrical systems shall be fully operational. Required inspections and tests shall have been successfully completed. Upon occupancy the Owner will provide operation and maintenance of mechanical and electrical systems in occupied portions of the building.

## 1.9 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:00 a.m. to 4:30 p.m., Monday through Friday, unless otherwise indicated. Permission must be requested and approved in writing to perform work outside the normal working hours or on a State Holiday.

1. Early Morning Hours for Dormitory Work: No noisy activities can take place prior to 8:00 am when working on or in the vicinity of a student dormitory.
  - C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
    1. Obtain Owner Representative written permission before proceeding with utility interruptions.
  - D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
    1. Notify Owner Representative not less than two days in advance of proposed disruptive operations.
  - E. Controlled Substances: Use of tobacco products and other controlled substances is not permitted.
  - F. In addition to reasons determined by the University, approval of deviations in work hours is dependent upon availability of University supervisory personnel.
    1. No person shall be employed to work or permitted to work more than eight hours in any day or more than forty hours in any week on any work provided for under this Contract. The observance of such limitations of hours of work may be suspended during an emergency, upon approval of the Executive Director of Architectural and Engineering Services.
  - G. If the Contractor determines that work on this project must be performed during a time other than normal working hours of the University, costs for any premium time must be included in the Base Bid.
  - H. No Work may be conducted during University exam periods without the written permission from the University Representative. Exam periods which may affect this project are scheduled per attached link: <http://www.registrar.uconn.edu/calendar.htm>
- 1.10 WORK SEQUENCE
- A. The responsibility of phasing the Work falls entirely on the Contractor.
- 1.11 MISCELLANEOUS PROVISIONS
- A. Certifications
    1. The Contractor, at completion of construction, shall provide to the University a “Certificate of Substantial Compliance” bearing original signatures of an officer of the company stating: “this is to CERTIFY that, in my professional opinion, the complete structure/renovations described above is in substantial compliance with the approved



construction documents on file with the University of Connecticut. Minor deviations and special stipulations are noted below (if any)”

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 10 00

SECTION 01 22 00 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.
  - 1. A unit price is an amount stated on the Proposal Form or in the Specifications as a price per unit of measurement for materials or services that will be added to or deducted from the Contract Sum by Change Order in the event the quantities of Work required by the Contract Documents are increased or decreased.
  - 2. Unit Prices include all necessary material, overhead, profit, and applicable taxes.
  - 3. Refer to individual Specification Sections for construction activities requiring the establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- B. Related Requirements:
  - 1. Division 01 Section "Quality Requirements" for general testing and inspecting requirements.

1.3 DEFINITIONS

- A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

3.2 SCHEDULE OF UNIT PRICES

- A. Unit Price No. 1: Turf Restoration
  - 1. Description: Install turf restoration as shown on the drawings and according to Division 32 Section "Turf and Grasses."
  - 2. Unit of Measurement: Square Feet
- B. Unit Price No. 2: Concrete Sidewalk
  - 1. Description: Install Concrete Sidewalk as shown on the drawings and according to Division 32 Section "Concrete Paving."
  - 2. Unit of Measurement: Square Feet
- C. Unit Price No. 3: Exploratory Excavations
  - 1. Description: Provide exploratory excavation at location approved by the University and according to Division 02 Section "Exploratory Excavations."
  - 2. Unit of Measurement: Cubic Feet.
- D. Unit Price No. 4: Removal of unsatisfactory soil and replacement with satisfactory soil material.
  - 1. Description: Unsatisfactory soil excavation and disposal off site and replacement with satisfactory fill material or engineered fill from off site, as required, according to Division 31 Section 31 2310 "Earthwork."
  - 2. Unit of Measurement: Cubic yard of soil excavated, based on survey of volume removed.
- E. Unit Price No. 5: Rock excavation and replacement with satisfactory soil material.
  - 1. Description: Classified rock excavation and disposal off site and replacement with satisfactory fill material or engineered fill from off site, as required, according to Division 31 Section 31 2310 "Earthwork."

2. Unit of Measurement: Cubic yard of rock excavated, based on survey of volume removed.

F. Unit Price No. 6. – Rock Excavation:

1. Description: Rock excavation according to Division 31 2310 Section "Earthwork."
2. Unit of Measurement: cubic yard

END OF SECTION 01 22 00

## SECTION 01-2300 - ALTERNATES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

#### 1.3 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
  - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
  - 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

#### 1.4 PROCEDURES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
  - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated revisions to alternates.
- C. Execute accepted alternates under the same conditions as other work of the Contract.

- D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.
- E. Alternates shall be valid for the life of the contract and may be selected within 30 days from notice to proceed at no additional cost to the owner. Alternates may be negotiated as applicable, in the event the owner selects the alternate beyond the 30 day period from notice to proceed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES (See Sheet L1.3 Gilbert Road Site Improvements, Alternates)

- A. Alternate No. 1: Tree Planting.
  - 1. Base Bid: Provide all labor and materials as shown in the drawings
  - 2. Alternate: Install 4 large trees instead of the 6 trees as indicated in the drawings
- B. Alternate No. 2: Benches.
  - 1. Base Bid: Provide all labor and materials to install the benches and concrete pads as indicated in the drawings
  - 2. Alternate: Provide all labor and materials as required for the installation of the concrete pads only.
- C. Alternate No. 3: Concrete Unit Pavers at entry plaza
  - 1. Base Bid: Provide all labor and materials to install the clay unit pavers as indicated in the drawings.
  - 2. Alternate: Provide all labor and materials to install concrete unit pavers as indicated in the drawings.
- D. Alternate No 4: Concrete pavement at entry plaza
  - 1. Base Bid: Provide all labor and materials to install the clay unit pavers as indicated in the drawings.
  - 2. Alternate: Provide all labor and materials to install concrete walkway as detailed in the drawings instead of unit pavers, contraction joint pattern to be 2' x 2'.

END OF SECTION 01-2300

## SECTION 01 25 00 - SUBSTITUTION PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
  - 1. Division 01 Section "Allowances" for products selected under an allowance.
  - 2. Division 01 Section "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.
  - 3. Divisions 02 through 33 Sections for specific requirements and limitations for substitutions.

#### 1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
  - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
  - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

#### 1.4 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  - 1. Substitution Request Form: Use CSI Form 13.1A.
  - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.



- b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
  - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
  - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
  - e. Samples, where applicable or requested.
  - f. Certificates and qualification data, where applicable or requested.
  - g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
  - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
  - i. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
  - j. Cost information, including a proposal of change, if any, in the Contract Sum.
  - k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
  - l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven (7) days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within fifteen (15) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
  - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

## 1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

## 1.6 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

## PART 2 - PRODUCTS

### 2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than Thirty (30) days prior to time required for preparation and review of related submittals.

- 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
  - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
  - b. Requested substitution provides sustainable design characteristics that specified product provided.
  - c. Substitution request is fully documented and properly submitted.
  - d. Requested substitution will not adversely affect Contractor's construction schedule.
  - e. Requested substitution has received necessary approvals of authorities having jurisdiction.
  - f. Requested substitution is compatible with other portions of the Work.
  - g. Requested substitution has been coordinated with other portions of the Work.
  - h. Requested substitution provides specified warranty.
  - i. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
  - j. Requested substitution does not require additional design changes to be performed by the architect/engineer in order to incorporate the substitution into the work.

- B. Substitutions for Convenience: Not allowed.

## PART 3 - EXECUTION (Not Used)

END OF SECTION 01 25 00

## SECTION 01 26 00 - CONTRACT MODIFICATION PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Requirements:
  - 1. Division 01 Section "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.

#### 1.3 MINOR CHANGES IN THE WORK

- A. Architect will issue through the University Representative supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on **AIA Document G710, "Architect's Supplemental Instructions."**

#### 1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect or University Representative will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
  - 1. Work Change Proposal Requests issued by Architect or University Representative are not instructions either to stop work in progress or to execute the proposed change.
  - 2. Within time specified in Proposal Request after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
    - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    - c. Include costs of labor and supervision directly attributable to the change.

- d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
  - e. Quotation Form: Use forms acceptable to Architect.
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect or University Representative.
1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
  2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
  3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
  4. Include costs of labor and supervision directly attributable to the change.
  5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
  6. Comply with requirements in Division 01 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
  7. Proposal Request Form: Use form acceptable to Architect or University Representative

#### 1.5 ADMINISTRATIVE CHANGE ORDERS

- A. Allowance Adjustment: See Division 01 Section "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.
- B. Unit-Price Adjustment: See Division 01 Section "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit-price work.

#### 1.6 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Changes Proposal Request, Architect or University Representative will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

1.7 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect or University Representative may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
  - 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
  - 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 26 00

## SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. General coordination procedures.
  - 2. Coordination drawings.
  - 3. Requests for Information (RFIs).
  - 4. Project Meetings.
    - a. Pre-construction conference
    - b. Pre-installation conference
    - c. Progress meetings
    - d. Coordination meetings
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.
- C. Related Requirements:
  - 1. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
  - 2. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
  - 3. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

#### 1.3 DEFINITIONS

- A. RFI: Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use of CSI Form 1.5A is recommended. Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.
  2. Number and title of related Specification Section(s) covered by subcontract.
  3. Drawing number and detail references, as appropriate, covered by subcontract.
- B. Key Personnel: Within fifteen (15) days of starting construction operations, submit a list of key personnel assignments, including project manager, superintendent, safety engineer and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
1. Post copies of list in project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.
  2. The University requires as a minimum, the following Key Personnel be assigned to this project. Each position shall be a full-time individual, dedicated to the position listed.
    - a. Project Manager (on site a minimum of once a week)
    - b. Project Superintendent (on-site full time for duration of project)
    - c. Project Engineer (as required)
  3. Each individual listed above shall have not less than five (5) years experience performing work of a similar nature to this project and in a comparable position to the position assigned on this project. Resumes will be required on all key personnel prior to acceptance. Removal of any personnel denoted as Key Personnel from the project will require Owner's prior approval.

#### 1.5 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  2. Weekly inspections of project by the safety officer are required. Safety inspector report to be submitted weekly to the University Representative.
  3. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
  4. Make adequate provisions to accommodate items scheduled for later installation.
- B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's construction schedule.
  2. Preparation of the schedule of values.
  3. Installation and removal of temporary facilities and controls.
  4. Delivery and processing of submittals.
  5. Progress meetings.
  6. Project closeout activities.
  7. Startup and adjustment of systems.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

#### 1.6 COORDINATION DRAWINGS

- A. Coordination Drawings, General: **PRIOR TO START OF WORK:** Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
    - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
    - b. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
    - c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
    - d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
    - e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
    - f. Indicate required installation sequences.
    - g. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed



resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Coordination Drawing Organization: Organize coordination drawings as follows:

1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
6. Mechanical and Plumbing Work: Show the following:
  - a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
  - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
  - c. Fire-rated enclosures around ductwork.
7. Electrical Work: Show the following:
  - a. Runs of vertical and horizontal conduit 1-1/4 inches in diameter and larger.
  - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
  - c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
  - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
8. Fire-Protection System: Show the following:
  - a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
9. Review: Architect will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Architect determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Architect will so inform Contractor, who shall make changes as directed and resubmit.
10. Coordination Drawing Prints: Prepare coordination drawing prints according to requirements in Division 01 Section "Submittal Procedures."

1.7 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
  2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
  2. Project number.
  3. Date.
  4. Name of Contractor.
  5. Name of Architect.
  6. RFI number, numbered sequentially.
  7. RFI subject.
  8. Specification Section number and title and related paragraphs, as appropriate.
  9. Drawing number and detail references, as appropriate.
  10. Field dimensions and conditions, as appropriate.
  11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
  12. Contractor's signature.
  13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
    - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: AIA Document G716.
1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow five (5) working days for Architect's response for each RFI. RFIs received by Architect after 2:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
    - a. Requests for approval of submittals.
    - b. Requests for approval of substitutions.
    - c. Requests for approval of Contractor's means and methods.
    - d. Requests for coordination information already indicated in the Contract Documents.
    - e. Requests for adjustments in the Contract Time or the Contract Sum.
    - f. Requests for interpretation of Architect's actions on submittals.
    - g. Incomplete RFIs or inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
  3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."
    - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within five (5) days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log monthly or as directed by Owner's representative. Use CSI Log Form 13.2B is recommended. Include the following:
1. Project name.
  2. Name and address of Contractor.
  3. Name and address of Architect.
  4. RFI number including RFIs that were returned without action or withdrawn.
  5. RFI description.
  6. Date the RFI was submitted.
  7. Date Architect's response was received.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven (7) days if Contractor disagrees with response.
1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
  2. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

## 1.8 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
  2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
  3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three (3) days of the meeting.
- B. Preconstruction Conference: The successful bidder shall attend a preconstruction conference and organizational meeting at the University of Connecticut Office of Architectural and Engineering Services, with the University Representative prior to any field work to review responsibilities and personnel assignments and to insure that Specifications, drawings and all conditions are understood to properly complete this Contract.

1. The meeting will be scheduled by the University Representative.
  2. Attendees: The Owner, University Tree Warden, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  3. Agenda: Discuss items of significance that could affect progress, including the following:
    - a. Tentative construction schedule.
    - b. Phasing.
    - c. Critical work sequencing and long-lead items.
    - d. Labor Market Regulations.
    - e. Designation of key personnel and their duties.
    - f. Lines of communications and emergency phone numbers.
    - g. Procedures for processing field decisions and Change Orders.
    - h. Procedures for RFIs.
    - i. Procedures for testing and inspecting.
    - j. Procedures for processing Applications for Payment.
    - k. Distribution of the Contract Documents and correspondence.
    - l. Submittal procedures.
    - m. Sustainable design requirements.
    - n. Preparation of record documents.
    - o. Use of the premises, including dust and noise control.
    - p. Parking and parking permits
    - q. Work restrictions including working hours.
    - r. Owner's occupancy requirements.
    - s. Responsibility for temporary facilities and controls.
    - t. Procedures for moisture and mold control.
    - u. Procedures for disruptions and shutdowns.
    - v. Construction waste management and recycling.
    - w. Office, work, and storage areas.
    - x. Equipment deliveries and priorities.
    - y. First aid.
    - z. Unacceptable behavior
    - aa. Security.
    - bb. Progress cleaning.
    - cc. UConn Construction Safety Manual, Safety procedures, including the University's Hazard Communication Program and policies on pest control, asbestos, lead-based paints, lockout/tagout procedures, excavation and trenching, disposal of PCB containing light ballasts, use of solvents, solvent or epoxy based paints, confined space entries and use of open flames.
  4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and

installations that have preceded or will follow, shall attend the meeting. Advise Architect, and Owner's Representative of scheduled meeting dates.

2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
    - a. Contract Documents.
    - b. Options.
    - c. Related RFIs.
    - d. Related Change Orders.
    - e. Purchases.
    - f. Deliveries.
    - g. Submittals, shop drawings, product data, and quality control samples.
    - h. Sustainable design requirements.
    - i. Review of mockups.
    - j. Possible conflicts.
    - k. Compatibility requirements.
    - l. Time schedules.
    - m. Weather limitations.
    - n. Manufacturer's written instructions.
    - o. Warranty requirements.
    - p. Compatibility of materials.
    - q. Acceptability of substrates.
    - r. Temporary facilities and controls.
    - s. Space and access limitations.
    - t. Safety.
    - u. Regulations of authorities having jurisdiction.
    - v. Testing and inspecting requirements.
    - w. Installation procedures.
    - x. Coordination with other work.
    - y. Required performance results.
    - z. Protection of adjacent work.
    - aa. Protection of construction and personnel.
  3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
  4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
  5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Conduct progress meetings at the Project Site at regularly (minimum bi-weekly) scheduled intervals.
1. Coordinate dates of meetings with preparation of payment requests.
  2. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
  - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
    - 1) Review schedule for next period.
  - b. Review present and future needs of each entity present, including the following:
    - 1) Interface requirements.
    - 2) Sequence of operations.
    - 3) Status of submittals.
    - 4) Status of stainable design documentation, if required.
    - 5) Deliveries.
    - 6) Off-site fabrication problems.
    - 7) Access.
    - 8) Site utilization.
    - 9) Temporary facilities and controls.
    - 10) Progress cleaning.
    - 11) Quality and work standards.
    - 12) Status of correction of deficient items.
    - 13) Field observations.
    - 14) Status of RFIs.
    - 15) Status of proposal requests.
    - 16) Pending changes.
    - 17) Status of Change Orders.
    - 18) Pending claims and disputes.
    - 19) Documentation of information for payment requests.
4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information. Contractor shall distribute copies of minutes of the meeting to each party present and to other parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report. Submit report no later than 3 days after each progress meeting date.
  - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.
- E. Coordination Meetings: Conduct Project coordination meetings at regular intervals convenient for all parties involved. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.

1. Attendees: Every party currently involved in coordination or planning for the construction activities involved. All participants at the meetings shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 00

## SECTION 01 32 00 - CONSTRUCTION PROGRESS DOCUMENTATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
  - 1. Contractor's construction schedule.
  - 2. Construction schedule updating reports.
  - 3. Daily construction reports.
  - 4. Material location reports.
  - 5. Site condition reports.
  - 6. Special reports.
- B. Related Requirements:
  - 1. Division 01 Section "Submittal Procedures" for submitting schedules and reports.
  - 2. Division 01 Section "Quality Requirements" for submitting a schedule of tests and inspections.

#### 1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
  - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
  - 2. Predecessor Activity: An activity that precedes another activity in the network.
  - 3. Successor Activity: An activity that follows another activity in the network.
- B. Cost Loading: The allocation of the schedule of values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum unless otherwise approved by Architect.
- C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.



- D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- E. Event: The starting or ending point of an activity.
- F. Float: The measure of leeway in starting and completing an activity.
  - 1. Float time belongs to Owner.
  - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
  - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- G. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
  - 1. Working electronic copy of schedule file, where indicated.
  - 2. PDF electronic file.
  - 3. Three (3) paper copies.
- B. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
  - 1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label. Submit schedule to the University Representative within 20 calendar days after the Contract Award
- C. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
  - 1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
  - 2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
  - 3. Total Float Report: List of all activities sorted in ascending order of total float.
  - 4. Earnings Report: Compilation of Contractor's total earnings from the Notice to Proceed until most recent Application for Payment.
- D. Construction Schedule Updating Reports: Submit with Applications for Payment.
- E. Daily Construction Reports: Submit at monthly intervals.
- F. Material Location Reports: Submit at monthly intervals.

- G. Site Condition Reports: Submit at time of discovery of differing conditions.
- H. Special Reports: Submit at time of unusual event.

## 1.5 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
- B. Coordinate Contractor's construction schedule with the schedule of values, submittal schedule, progress reports, payment requests, and other required schedules and reports.
  - 1. Secure time commitments for performing critical elements of the Work from entities involved.
  - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

## PART 2 - PRODUCTS

### 2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Substantial Completion.
  - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work. Comply with the following:
  - 1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
  - 2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
  - 3. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
  - 4. Startup and Testing Time: Include no fewer than 15 days for startup and testing.
  - 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
  - 6. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.
- C. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.

- D. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
1. Unresolved issues.
  2. Unanswered Requests for Information.
  3. Rejected or unreturned submittals.
  4. Notations on returned submittals.
  5. Pending modifications affecting the Work and Contract Time.
- E. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.
- F. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

## 2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

- A. CPM Schedule: Prepare Contractor's construction schedule of sufficient detail to indicate all significant construction activities. The level of detail should be such that no activity should exceed 20 working days. Where similar activities continue beyond the 20 day limit, these activities should be broken into subgroups, specific areas, or phases so that the 20 day maximum duration is maintained.
1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 20 calendar days after date established for the Notice to Proceed.
    - a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Architect's approval of the schedule.
  2. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
  3. Use "one workday" as the unit of time for individual activities. Indicate nonworking days and holidays incorporated into the schedule in order to coordinate with the Contract Time.
- B. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the startup network diagram, prepare a skeleton network to identify probable critical paths.
1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
    - a. Preparation and processing of submittals.
    - b. Mobilization and demobilization.

- c. Purchase of materials.
  - d. Delivery.
  - e. Fabrication.
  - f. Utility interruptions.
  - g. Installation.
  - h. Testing.
  - i. Punch list and final completion.
  - j. Activities occurring following final completion.
2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
  3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
  4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.
    - a. Subnetworks on separate sheets are permissible for activities clearly off the critical path.

## 2.3 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
  1. List of subcontractors at Project site.
  2. List of separate contractors at Project site.
  3. Approximate count of personnel at Project site.
  4. Equipment at Project site.
  5. Material deliveries.
  6. High and low temperatures and general weather conditions, including presence of rain or snow.
  7. Accidents.
  8. Meetings and significant decisions.
  9. Unusual events (see special reports).
  10. Stoppages, delays, shortages, and losses.
  11. Meter readings and similar recordings.
  12. Emergency procedures.
  13. Orders and requests of authorities having jurisdiction.
  14. Change Orders received and implemented.
  15. Construction Change Directives received and implemented.
  16. Services connected and disconnected.
  17. Equipment or system tests and startups.
  18. Partial completions and occupancies.
  19. Substantial Completions authorized.
- B. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on

and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:

1. Material stored prior to previous report and remaining in storage.
2. Material stored prior to previous report and since removed from storage and installed.
3. Material stored following previous report and remaining in storage.

- C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

## 2.4 SPECIAL REPORTS

- A. General: Submit special reports directly to Owner within one (1) day of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

## PART 3 - EXECUTION

### 3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
  2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
  3. As the Work progresses, indicate final completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
  2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 01 32 00

## SECTION 01 32 33 - PHOTOGRAPHIC DOCUMENTATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
  - 1. Preconstruction photographs.
  - 2. Periodic construction photographs.
  - 3. Final completion construction photographs.
- B. Related Requirements:
  - 1. Division 01 Section "Submittal Procedures" for submitting photographic documentation.
  - 2. Division 01 Section "Closeout Procedures" for submitting photographic documentation as project record documents at Project closeout.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- B. Digital Photographs: Submit image files within three days of taking photographs.
  - 1. Digital Camera: Minimum sensor resolution of 8 megapixels.
  - 2. Format: Minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
  - 3. Identification: Provide the following information with each image description in file metadata tag:
    - a. Name of Project.
    - b. Name and contact information for photographer.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Date photograph was taken.
    - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
    - g. Unique sequential identifier keyed to accompanying key plan.

- C. Construction Photographs: Submit digital images in jpg format and 3-by-5 or 4-by-6 smooth-surface matte prints on single-weight, commercial-grade photographic paper in seven days of taking photographs.
  - 1. Identification: On back of each print, provide an applied label or rubber-stamped impression with the following information:
    - a. Name of Project.
    - b. Name and contact information for photographer.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Date photograph was taken if not date stamped by camera.
    - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
    - g. Unique sequential identifier keyed to accompanying key plan.

#### 1.4 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

### PART 2 - PRODUCTS

#### 2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.

### PART 3 - EXECUTION

#### 3.1 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Engage a qualified photographer to take construction photographs.
- B. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
  - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
  - 1. Date and Time: Include date and time in file name for each image.

2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect.
- D. Preconstruction Photographs: Before commencement of demolition for renovation projects or starting new construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.
1. Flag construction limits before taking construction photographs.
  2. Take 20 photographs to show existing conditions adjacent to property before starting the Work.
  3. Take 20 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
  4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- E. Periodic Construction Photographs: Take 20 photographs monthly or at significant start and finish points of construction phases with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- F. Architect-Directed Construction Photographs: From time to time, Architect may instruct photographer about number and frequency of photographs and general directions on vantage points. Select actual vantage points and take photographs to show the status of construction and progress since last photographs were taken.
- G. Time-Lapse Sequence Construction Photographs: Take 20 photographs as indicated, to show status of construction and progress since last photographs were taken.
1. Frequency: Take photographs monthly, coinciding with the cutoff date associated with each Application for Payment.
  2. Vantage Points: Following suggestions by Architect and Contractor, photographer to select vantage points. During each of the following construction phases, take not less than two of the required shots from same vantage point each time to create a time-lapse sequence as follows:
    - a. Commencement of the Work, through completion of subgrade construction.
    - b. Above-grade structural framing.
    - c. Exterior building enclosure.
    - d. Interior Work, through date of Substantial Completion.
- H. Final Completion Construction Photographs: Take 20 color photographs after date of Substantial Completion for submission as project record documents. Architect will inform photographer of desired vantage points.
1. Do not include date stamp.
- I. Additional Photographs: Architect or Owner may request photographs in addition to periodic photographs specified. Additional photographs will be paid for by Change Order and are not included in the Contract Sum.



1. Three days' notice will be given, where feasible.
2. In emergency situations, take additional photographs within 24 hours of request.
3. Circumstances that could require additional photographs include, but are not limited to, the following:
  - a. Special events planned at Project site.
  - b. Immediate follow-up when on-site events result in construction damage or losses.
  - c. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
  - d. Substantial Completion of a major phase or component of the Work.
  - e. Extra record photographs at time of final acceptance.
  - f. Owner's request for special publicity photographs.

END OF SECTION 01 32 33

## SECTION 01 33 00 - SUBMITTAL PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals, including;

1. Contractor's construction schedule
2. Submittal schedule
3. Shop Drawings
4. Coordination Drawings and Layout
5. Daily Construction Reports
6. Product Data
7. Samples
8. Site Mobilization Plan
9. Safety Plan

- B. Related Requirements:

1. AIA Document A101 Contract Article 5 "Payments" for submitting Applications for Payment and the schedule of values.
2. Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
3. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

#### 1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

- C. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

#### 1.4 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.
  - 1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
  - 2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
  - 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
    - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
  - 4. Format: Arrange the following information in a tabular format:
    - a. Scheduled date for first submittal.
    - b. Specification Section number and title.
    - c. Submittal category: Action; informational.
    - d. Name of subcontractor.
    - e. Scheduled date for Architect's final release or approval.

#### 1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
  - 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
  - 4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

- B. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 10 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
  2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
  3. Resubmittal Review: Allow 10 days for review of each resubmittal.
  4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.
  5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 15 days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.
- C. Paper Submittals: Place a permanent label or title block on each submittal item for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
  2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
  3. Include the following information for processing and recording action taken:
    - a. Project name.
    - b. Date.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Name of subcontractor.
    - f. Name of supplier.
    - g. Name of manufacturer.
    - h. Submittal number or other unique identifier, including revision identifier.
      - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
    - i. Number and title of appropriate Specification Section.
    - j. Drawing number and detail references, as appropriate.
    - k. Location(s) where product is to be installed, as appropriate.
    - l. Other necessary identification.
  4. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
    - a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to University Representative.

5. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return without review submittals received from sources other than Contractor.
  - a. Transmittal Form for Paper Submittals: Use AIA Document G810
- D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
  1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
  2. Name file with submittal number or other unique identifier, including revision identifier.
    - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
  3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
  4. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner, containing the following information:
    - a. Project name.
    - b. Date.
    - c. Name and address of Architect.
    - d. Name of Contractor.
    - e. Names of subcontractor, manufacturer, and supplier.
    - f. Category and type of submittal.
    - g. Specification Section number and title.
    - h. Related physical samples submitted directly.
    - i. Indication of full or partial submittal.
    - j. Transmittal number.
    - k. Submittal and transmittal distribution record.
    - l. Remarks.
- E. Options: Identify options requiring selection by Architect.
- F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
  1. Note date and content of previous submittal.
  2. Note date and content of revision in label or title block and clearly indicate extent of revision.

3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

## PART 2 - PRODUCTS

### 2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections. Transmit each submittal from Contractor to University Representative using a transmittal form.
  1. Submit electronic submittals via email as PDF electronic files.
    - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
  2. Action Submittals: Submit seven (7) paper copies of each submittal unless otherwise indicated. Architect will return three (3) copies.
  3. Informational Submittals: Submit four (4) paper copies of each submittal unless otherwise indicated. Architect will not return copies.
  4. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
    - a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.
    - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
  1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
  2. Mark each copy of each submittal to show which products and options are applicable.
  3. Include the following information, as applicable:
    - a. Manufacturer's catalog cuts.
    - b. Manufacturer's product specifications.
    - c. Standard color charts.

- d. Statement of compliance with specified referenced standards.
  - e. Notation of coordination requirements.
4. For equipment, include the following in addition to the above, as applicable:
    - a. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
  5. Submit Product Data before or concurrent with Samples.
  6. Submit Product Data in the following format:
    - a. Four (4) paper copies of Product Data unless otherwise indicated. Owner will retain one (1) copy and Architect will retain one copy; remainder will be returned.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Identification of products.
    - b. Schedules.
    - c. Compliance with specified standards.
    - d. Notation of coordination requirements.
    - e. Notation of dimensions established by field measurement.
    - f. Relationship and attachment to adjoining construction clearly indicated.
    - g. Seal and signature of professional engineer if specified.
  2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.
  3. Submit Shop Drawings in the following format:
    - a. Five (5) opaque copies of each submittal. Owner will retain one (1) copy and Architect will retain two (2) copies; remainder will be returned.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
  2. Identification: Attach label on unexposed side of Samples that includes the following:
    - a. Generic description of Sample.
    - b. Product name and name of manufacturer.
    - c. Sample source.
    - d. Number and title of applicable Specification Section.
  3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.

4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
  - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
  - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
  - a. Number of Samples: Submit two full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
  - a. Number of Samples: Submit three (3) sets of Samples. Architect will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record sample.
    - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
    - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three (3) sets of paired units that show approximate limits of variations.
- E. Coordination Drawing Submittals: Comply with requirements specified in Division 01 Section "Project Management and Coordination."
- F. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."
- G. Application for Payment and Schedule of Values: Comply with requirements specified in Division 00 Section "Payment Procedures."
- H. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Division 01 Section "Quality Requirements."
- I. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."



- J. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
- K. Site Mobilization Plan
  - 1. Prior to the start of operations on the site, the Contractor shall submit to the University Representative, a Site Mobilization Plan which shall indicate pertinent dates and times, logistics, construction fence, laydown area, traffic flow and compliance with the General Requirements to a level of detail commensurate with the complexity of the construction and the sensitivity of the Owner's ongoing activities on site.
- L. Safety Plan
  - 1. Prior to, and as a condition of mobilization on site, the Contractor shall submit a Safety Plan consisting of no less that the following information:
    - a. Material Safety Data Sheets for all potentially harmful substances.
    - b. A list of Contractor, Subcontractor, and University personnel to be notified in the event of an emergency.
    - c. A list of Contractor's personnel to be notified by the University in the event of an emergency during "off" hours.
    - d. Evacuation Plans.
    - e. Emergency medical procedures.
    - f. Locations of emergency medical equipment.
    - g. Completed Contactor Receipt Acknowledgement Form from the last page of the University of Connecticut, Contractor EHS Manual ([http://www.ehs.uconn.edu/ppp/Contractor\\_EHS\\_Manual.pdf](http://www.ehs.uconn.edu/ppp/Contractor_EHS_Manual.pdf))

## 2.2 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file and three (3) paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
  - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, design loads, and other factors used in performing these services.

### PART 3 - EXECUTION

#### 3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to University Representative. The University Representative will transmit submittals to Architect for action unless otherwise agreed upon arrangements are made.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Division 01 Section "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

#### 3.2 ARCHITECT'S ACTION

- A. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return the submittal to contractor with a copy to the University Representative. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Submittals not required by the Contract Documents may be returned by the Architect without action.

END OF SECTION 01 33 00

## SECTION 01 40 00 - QUALITY REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Requirements:
  - 1. Division 01 Section "Allowances" for testing and inspecting allowances.
  - 2. Divisions 02 through 33 Sections for specific test and inspection requirements.

#### 1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where

indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

- D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

#### 1.4 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

## 1.5 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Qualification Data: For Contractor's quality-control personnel.
- C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:
  - 1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Architect.
  - 2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Architect.
- D. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
  - 1. Specification Section number and title.
  - 2. Entity responsible for performing tests and inspections.
  - 3. Description of test and inspection.
  - 4. Identification of applicable standards.
  - 5. Identification of test and inspection methods.
  - 6. Number of tests and inspections required.
  - 7. Time schedule or time span for tests and inspections.
  - 8. Requirements for obtaining samples.
  - 9. Unique characteristics of each quality-control service.

## 1.6 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Submit in format acceptable to Owner. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.
- B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
  - 1. Project quality-control manager may also serve as Project superintendent.
- C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:

1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
  2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
  3. Owner-performed tests and inspections indicated in the Contract Documents.
- E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

#### 1.7 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
1. Date of issue.
  2. Project title and number.
  3. Name, address, and telephone number of testing agency.
  4. Dates and locations of samples and tests or inspections.
  5. Names of individuals making tests and inspections.
  6. Description of the Work and test and inspection method.
  7. Identification of product and Specification Section.
  8. Complete test or inspection data.
  9. Test and inspection results and an interpretation of test results.
  10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
  11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  12. Name and signature of laboratory inspector.
  13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of technical representative making report.
  2. Statement on condition of substrates and their acceptability for installation of product.
  3. Statement that products at Project site comply with requirements.
  4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  5. Results of operational and other tests and a statement of whether observed performance complies with requirements.

6. Statement whether conditions, products, and installation will affect warranty.
  7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of factory-authorized service representative making report.
  2. Statement that equipment complies with requirements.
  3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  4. Statement whether conditions, products, and installation will affect warranty.
  5. Other required items indicated in individual Specification Sections.

## 1.8 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
  2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
  2. Notify Architect 7 days in advance of dates and times when mockups will be constructed.
  3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
  4. Demonstrate the proposed range of aesthetic effects and workmanship.
  5. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
    - a. Allow 7 days for initial review and each re-review of each mockup.
  6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
  7. Demolish and remove mockups when directed unless otherwise indicated.
- K. Integrated Exterior Mockups: Construct integrated exterior mockup as indicated on Drawings. Coordinate installation of exterior envelope materials and products for which mockups are required in individual Specification Sections, along with supporting materials.

## 1.9 QUALITY CONTROL

- A. Owner Responsibilities: The Owner will provide independent inspections, tests, and similar quality control services specified to be performed by independent agencies and not by the contractor, except where they are specifically indicated as the contractor's responsibility or are provided by another identified entity. Costs for these services are not included in the Contract Sum.
1. The Owner will employ and pay for services of an independent agency and furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
  2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.



- B. Contractor Responsibilities: Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
  2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
    - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
  3. Notify the University Representative and testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
  4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."
- D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- F. Testing Agency Responsibilities: Cooperate with Architect, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify University Representative, Architect, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
  3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
  5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  6. Do not perform any duties of Contractor.

- G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
  2. Incidental labor and facilities necessary to facilitate tests and inspections.
  3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
  4. Facilities for storage and field curing of test samples.
  5. Delivery of samples to testing agencies.
  6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  7. Security and protection for samples and for testing and inspecting equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.
1. Distribution: Distribute schedule to Owners Representative, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

#### 1.10 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, as indicated in Statement of Special Inspections attached to this Section.

#### PART 2 - PRODUCTS (Not Used)

#### PART 3 - EXECUTION

##### 3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
1. Date test or inspection was conducted.
  2. Description of the Work tested or inspected.
  3. Date test or inspection results were transmitted to Architect.

4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Owner Representative and Architect's reference during normal working hours.

### 3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 01 Section "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

## SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes requirements for temporary services and facilities, including:
  - 1. Utilities
  - 2. Temporary construction
  - 3. Construction aids
  - 4. Barriers and enclosures
  - 5. Security
  - 6. Access roads
  - 7. Temporary controls
  - 8. Traffic control
  - 9. Project identification and signs
  - 10. Field offices and sheds
  - 11. Installation of Owner provided decorative banners on site enclosure fencing.
- B. Related Requirements:
  - 1. Division 01 Section "Summary" for work restrictions and limitations on utility interruptions.
  - 2. Division 32 Section "Asphalt Paving" for construction and maintenance of asphalt pavement for temporary roads and paved areas.
- C. Temporary utilities may include but are not limited to:
  - 1. Temporary electric power and light.
  - 2. Temporary heating, cooling and ventilating.
  - 3. Telephone service.
  - 4. Water services and distribution.
  - 5. Temporary sanitary facilities, including drinking water.
  - 6. Temporary sewers and drainage
  - 7. Temporary fire protection.
- D. Security may include but is not limited to:
  - 1. Permanent fire protection.
  - 2. Covered walkways at entrances
  - 3. Security enclosures, fences and lockups

E. Access roads and parking include but are not limited to:

1. Temporary roads and paving

F. Temporary controls may include but are not limited to:

1. Dewatering facilities and drains
2. Waste disposal
3. Rodent and pest control
4. Environmental protection
5. Nuisance dust control
6. Noise control.

### 1.3 USE CHARGES

A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Architect, testing agencies, and authorities having jurisdiction.

1. Contractor shall furnish and install all necessary temporary switches, wiring, fixtures, bulbs, piping and other devices as may be required to connect to existing systems.

B. Water and Sewer Service from Existing System: A moderate quantity of water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations. The University reserves the right to require the Contractor to install meters and, if obvious and excessive use is observed, to pay for these utilities.

C. Electric Power Service from Existing System: A moderate quantity of electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations. The University reserves the right to require the Contractor to install meters and, if obvious and excessive use is observed, to pay for these utilities.

### 1.4 INFORMATIONAL SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

B. Erosion and Sedimentation Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

C. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

D. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.

1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
  2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
- E. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust and HVAC control measures proposed for use, proposed locations, and proposed time frame for their operation. Identify further options if proposed measures are later determined to be inadequate. Include the following:
1. Locations of dust-control partitions at each phase of work.
  2. HVAC system isolation schematic drawing.
  3. Location of proposed air-filtration system discharge.
  4. Waste handling procedures.
  5. Other dust-control measures.

## 1.5 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations and authorities having jurisdiction, including but not limited to:
1. Building Code requirements
  2. Health and safety regulations
  3. Utility company regulations
  4. Police, Fire Department and Rescue Squad rules.
  5. Environmental protection regulations.
- B. Standards: Comply with NFPA Code 241, "Standard for Safeguarding Construction, Alteration, and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition", and NECA Electrical Design Library "Temporary Electrical Facilities."
- C. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with National Electric Code (NFPA 70).
- D. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

## 1.6 PROJECT CONDITIONS

- A. Temporary Utilities: Prepare a schedule indicating dates of implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary services to use of the permanent service.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire preventative measures. Do not overload facilities, or permit them to interfere with progress of work. Do not allow hazardous dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General: Provide new materials; if acceptable to the Architect, undamaged previously used materials in serviceable condition may be used. Provide materials suitable for the use intended.
- B. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch OD line posts and 2-7/8-inch OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top and bottom rails. Supporting post shall be driven. If pedestals are used, internal support shall be provided, no external support or sandbags shall be allowed. Provide dark green reinforced scrim sheeting on all fencing. All fencing shall be in good condition, the owner reserves the right to refuse any portion of the fence.
- C. Wood Enclosure Fence: 3/8" thick Plywood, minimum 6 feet high, framed with four 2-by-4-inch rails, with preservative-treated wood posts spaced not more than 8 feet apart.
- D. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.
- E. Dust-Control Adhesive-Surface Walk-off Mats: Provide mats minimum 36 by 60 inches.
- F. Gypsum Wallboard: Provide gypsum wallboard complying with requirements of ASTM C 36 on interior walls of temporary partitions.
- G. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.
- H. Water: Provide potable water approved by local health authorities.

### 2.2 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Architect and construction personnel office activities and to accommodate Project meetings specified in other Division 01 Sections. Keep office clean and orderly. Furnish and equip offices as follows:
  - 1. Furniture required for Project-site documents including file cabinets, plan tables, plan racks, and bookcases.
  - 2. Conference room of sufficient size to accommodate meetings of 10 individuals. Provide electrical power service and 120-V ac duplex receptacles, with no fewer than one receptacle on each wall. Furnish room with conference table, chairs, and 4-foot square tack and marker boards.
  - 3. Drinking water and private toilet.
  - 4. Coffee machine and supplies.

5. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 75 deg F.
  6. Lighting fixtures capable of maintaining average illumination of 20 fc at desk height.
- C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
1. Store combustible materials apart from building.

## 2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; comply with NFPA 10 and 241 for classification, extinguishing agent and size required by location and class of fire exposure.
- B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
  2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.
  3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return-air grille in system and remove at end of construction.
- C. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.
- D. Electrical Outlets: Provide properly configured NEMA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for connection of power tools and equipment.
- E. Electrical Power Cords: Provide grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress.
- F. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered glass enclosures, where exposed to breakage. Provide exterior fixture where exposed to moisture.
- G. First Aid Supplies: Comply with governing regulations.



## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
  - 1. Locate facilities to limit site disturbance as specified in Division 01 Section "Summary."
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.
- C. Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the University Representative and shall be built with labor and materials furnished by the Contractor without expense to the University. The temporary buildings and utilities shall remain the property of the Contractor at its expense upon completion of the Work. With the written consent of the University Representative, the buildings and utilities may be abandoned and need not be removed.
- D. Noise Control: The Contractor shall make every effort to minimize noise disruption to occupants of buildings and adjacent buildings. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the site. No noise generating work that interferes with classroom operation shall be tolerated. No noise generating work shall be allowed during exam periods where the noise will impact classroom functions. Examples of noise generating work include, but are not limited to sawing, drilling and hammering and/or jackhammering.
  - 1. Avoid use of tools and equipment, which produce harmful noise. No gasoline-powered equipment shall be used during times that the buildings are occupied. No gasoline-powered equipment may be used in the interior of buildings at any time.
- E. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material in a lawful manner.
  - 1. All removed materials that are salvageable are the property of the Contractor unless otherwise noted in the specifications.
  - 2. All debris resulting from the performance of this contract will be the property of the Contractor and will be completely removed from the campus and disposed of in a legal manner.
  - 3. Chutes and dumpster type containers designed to keep dust and spillage to a minimum will be used by the Contractor. Dumpsters will be completely covered with a waterproof covering at all times when not in use.

- F. Nuisance Dust Control: The following provisions shall apply during demolition or construction phases of work:
1. It is the intent of this specification to insure that nuisance dusts resulting from demolition or construction activities do not impact occupied areas of the building. The Contractor shall take all measures necessary to accomplish this goal. These measures will include as minimum polyethylene sheeting or wet methods of fugitive dust control.
  2. The Contractor shall submit a plan prior to commencement of work that will detail all methods of dust control. This plan shall be approved by the University Representative prior to commencement of work. Upon approval, this plan shall be distributed to the University Representative and the building representative on the Safety Committee.
  3. Failure to comply shall result in immediate stoppage of work until effective dust control measures are employed.

### 3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
1. Arrange with appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment; comply with the company's recommendations.
  2. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
  3. The University must be notified at least 72 hours in advance of any proposed interruption in order that all affected departments may be advised and have time to adjust their schedules accordingly.
  4. Any service (steam, water, electricity, etc.) shutdown which will interrupt the continuity of an experiment or be detrimental to a research project or which, in the opinion of the University, is required for other valid reasons, shall be maintained by safe and adequate temporary means and such temporary piping, wiring and associated devices shall be removed when no longer required.
  5. The University reserves the right to limit the down time to a specified number of net hours and to set the date for each occasion of complete shutdown.
  6. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
  7. Obtain easements to bring temporary utilities to the site, where the Owner's easements cannot be used for that purpose.
- B. Sewers and Drainage: If sewers are available, provide temporary connection to remove effluent that can be discharged lawfully. If sewers are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off the site in a lawful manner.
1. Filter out excessive amounts of soil, construction debris, chemicals, oils and similar contaminants that might clog sewers or pollute waterways before discharge.
  2. Connect temporary sewers to the municipal system as directed by the sewer department officials.

3. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. Following heavy use, restore normal conditions promptly.
- C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction. Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
1. Sterilization: Sterilize temporary water piping in accordance with AWWA requirements prior to use.
- D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
1. Use of Owner's existing sanitary facilities will not be permitted.
  2. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.
  3. Provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. Provide covered waste containers for used materials.
  4. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.
    - a. Provide safety showers, eyewash fountains and similar facilities for convenience, safety and sanitation of personnel
  5. Drinking Water Fixtures: Provide drinking water fountains where indicated including paper supply.
  6. Drinking Water Facilities: Provide containerized tap-dispenser bottled-water type drinking water units, including paper supply.
    - a. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F.
- E. Heating: Provide temporary heating required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
1. Steam from the University's steam lines shall be metered and paid for by the Contractor at a rate of \$0/Therm. Contractor shall install and maintain temporary piping, radiators or unit heaters, reducing valves, steam traps and other necessary fittings and accessories. Traps shall be provided to prevent steam from entering main returns. The temporary layout shall meet the approval of the Architect/Engineer and University Representative. Condensate meter (or meters) shall be installed to record usage of steam. Provide temporary heat required by construction activities, for curing or drying of completed installations or protection of installed construction from adverse effects of low temperature or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy.

2. The Contractor shall provide temporary heat during construction for interior areas included in the Contract, and any adjacent or nearby occupied areas, to counteract low temperatures or excessive dampness and in any event, between October 15<sup>th</sup> and May 15<sup>th</sup>, maintain during said period or periods until final completion of the Contract, unless otherwise approved by the University representative in writing. Provide heat and ventilation to maintain specified conditions for construction operations and to protect materials and finishes from damage by temperature or humidity. Costs shall be paid by the Contractor. Unless otherwise specified in the Contract Documents, the temporary heating shall be sized to maintain the following conditions on a 24-hour-per-day basis:
    - a. Occupied Dormitory or Living Areas: 68 degrees F
    - b. Office Spaces/Laboratories/Classrooms: 68 degrees F
    - c. Warehouses/Storage: 55 degrees F
  3. The areas listed above are for example only. The University Representative shall have sole discretion to assign minimum heating criteria.
- F. Electrical Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload protected disconnects, automatic ground-fault interrupters and main distribution switch gear.
1. Except where overhead service must be used, install electric power service underground.
  2. Power Distribution System: Install wiring overhead, and rise vertically where least exposed to damage. Where permitted, wiring circuits not exceeding 125 volts, AC 20 ampere rating, and lighting circuits may be nonmetallic sheathed cable where overhead and exposed for surveillance
- G. Lighting: Whenever overhead floor or roof deck has been installed, provide temporary lighting with local switching.
1. Install and operate temporary lighting that will fulfill security and protection requirements, without operating the entire system, and will provide adequate illumination for construction and traffic and safety conditions.
  2. Install exterior yard and sign lights so that signs are visible when Work is being performed.
- H. Telephones: Provide temporary or cellular telephone service for all personnel engaged in construction activities, throughout the construction period. Contractor shall arrange and pay for his own telephone service.
1. Post or maintain within a project notebook a list of important telephone numbers.
    - a. Police and fire departments.
    - b. Ambulance service.
    - c. Contractor's home office.
    - d. Contractor's emergency after-hours telephone number.
    - e. Architect's office.
    - f. Engineers' offices.
    - g. University Representative office.
    - h. Principal subcontractors' field and home offices.

- I. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
  - 1. Prior to commencing work, isolate the HVAC system in area where work is to be performed according to coordination drawings.
    - a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
    - b. Maintain negative air pressure within work area using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
  - 2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
  - 3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.
  
- J. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
  - 1. Provide dehumidification systems when required to reduce substrate moisture levels to level required to allow installation or application of finishes.
  
- K. Fire Protection: Until fire protection needs are supplied by permanent facilities, install and maintain temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 “Standard for Portable Fire Extinguishers,” and NFPA 241 “Standard for Safeguarding Construction, Alterations and Demolition Operations.”
  - 1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
  - 2. Store combustible materials in containers in fire-safe locations.
  - 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires. Prohibit smoking in hazardous fire exposure areas.
  - 4. Provide supervision of all welding operations, combustion type temporary heating units, and similar sources of fire ignition.
  - 5. No gasoline shall be stored in or close to a building at any time.

### 3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
  - 1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.

2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
  3. Locate field offices, storage sheds, sanitary facilities and other temporary construction and support facilities for easy access.
- B. Field Offices and Sheds: A field office is not required for this project, however should the Contractor choose to provide a field office, see requirements below:
1. Provide non-combustible construction for offices, shops and sheds located within the construction area, or within 30 feet of building lines. Comply with requirements of NFPA 241.
  2. Field Offices: Provide insulate, weathertight temporary offices with electric lighting, air conditioning and heat and of sufficient size to accommodate required office personnel at the Project Site. The Field Office shall have two rooms, each approximately 150 square feet in size. The offices shall have ample natural light, a heater of sufficient capacity to maintain 70 degrees F in winter and an air conditioner of sufficient capacity to maintain 75 degrees F in summer. No trailer will be allowed on University property unless permanent markings indicating the name of the company are clearly visible. Keep the office clean and orderly of use for small progress meetings. Furnish and equip offices with a minimum of the following:
    - a. Furnish with desks and chairs, file cabinets, plan tables, plan racks, waste receptacles, conference room table and at least eight chairs.
    - b. Equip with a water cooler and private toilet complete with water closet, lavatory and mirror-medicine cabinet unit.
    - c. Equip with a 5 lb ABC fire extinguisher and an OSHA-approved first aid kit. Equip with a facsimile machine and copier for use by the Contractor, University Representative and Architect/Engineer.
- C. Temporary Roads and Paved Areas: Comply with the following:
1. The Contractor shall, under regulation prescribed by the University Representative, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the University Representative. When materials are transported in prosecuting the Work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.
  2. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.
  3. Construct and maintain temporary roads and paving to adequately support the indicated loading and to withstand exposure to traffic during the construction period. Locate temporary paving for roads, storage areas and parking where the same permanent facilities will be located. Review proposed modifications to permanent paving with the Architect.

- a. Paving: Comply with Division-2 Section "Asphalt Concrete Paving" for construction and maintenance of temporary paving.
  - b. Coordinate temporary paving development with subgrade grading, compaction, installation and stabilization of subbase, and installation of base and finish courses of permanent paving.
  - c. Install temporary paving to minimize the need to rework the installations and to result in permanent roads and paved areas that are without damage or deterioration when occupied by the Owner
  - d. Delay installation of the final course of permanent asphalt concrete paving until immediately before Substantial Completion. Coordinate with weather conditions to avoid unsatisfactory results.
  - e. Extend temporary paving in and around the construction area as necessary to accommodate delivery and storage of materials, equipment usage, administration and supervision.
- D. Temporary Use of Permanent Roads and Paved Areas: Locate temporary roads and paved areas in same location as permanent roads and paved areas. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.
1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
  2. Prepare subgrade and install subbase and base for temporary roads and paved areas according to Division 31 Section "Earth Moving."
  3. Recondition base after temporary use, including removing contaminated material, regrading, proofrolling, compacting, and testing.
  4. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course according to Division 32 Section "Asphalt Paving."
  5. Maintain access for fire-fighting equipment and access to fire hydrants.
- E. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
  2. Remove snow and ice as required to minimize accumulations.
- F. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- G. Temporary Elevator Use: The Contractor will be permitted to use the freight elevator for freight service and transportation of construction personnel during the construction period. This elevator must also be available to the Owner at all times; coordinate usage with the University Representative. At the end of construction, restore the elevator to its original condition; replace worn cables, guide shoes and similar items of limited life. Use of other elevators by the Contractor will not be permitted.

1. Do not load elevators beyond their rated weight capacity.
  2. Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.
- H. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.
- I. Existing Stair Usage: Use of Owner's existing emergency stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.
- J. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.

### 3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
1. Comply with work restrictions specified in Division 01 Section "Summary."
- C. Temporary Erosion and Sedimentation Control: Comply with the latest requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent and requirements specified in Division 31 Section "Site Clearing."
- D. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to requirements of the latest EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.
1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant- protection zones.
  2. Inspect, repair, and maintain erosion and sedimentation-control measures during construction until permanent vegetation has been established.
  3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.



4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
- E. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- F. Tree and Plant Protection: Comply with requirements specified in Division 01 Section "Temporary Tree and Plant Protection."
  1. Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- G. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.
- H. Site Enclosure Fence: Prior to commencing earthwork, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates. All fencing to have dark green reinforced scrim sheeting.
  1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations or as indicated on Drawings.
  2. Maintain security by limiting number of keys and restricting distribution to authorized personnel.
  3. Contractor to install owner provided decorative banners on the exterior side of the site enclosure fencing as directed by owner's representative
- I. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.
- J. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- K. Temporary Egress: Maintain temporary egress from existing occupied facilities at all times and as required by authorities having jurisdiction.
- L. Covered Walkway: Erect protective, covered walkway for passage of individuals through or adjacent to Project site. Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of authorities having jurisdiction and requirements indicated on Drawings.
  1. Construct covered walkways using scaffold or shoring framing.
  2. Provide overhead decking, protective enclosure walls, handrails, barricades, warning signs, exit signs, lights, safe and well-drained walkways, and similar provisions for protection and safe passage.
  3. Where required by OSHA regulations provide temporary lighting under covered walkways to satisfy requirements.

4. Covered walkways shall maintain a minimum clear height of 8ft above walking surface, and shall be designed to support all imposed loads and a minimum live load of 150 psf.
- M. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.
- N. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.
1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.
  2. Construct dustproof partitions with two layers of 6-mil polyethylene sheet on each side. Cover floor with two layers of 6-mil polyethylene sheet, extending sheets 18 inches up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant-treated plywood.
    - a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches between doors. Maintain water-dampened foot mats in vestibule.
  3. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
  4. Insulate partitions to control noise transmission to occupied areas.
  5. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
  6. Protect air-handling equipment.
  7. Provide walk-off mats at each entrance through temporary partition.
- O. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
1. Prohibit smoking in construction areas.
  2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
  3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with University fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
  4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

### 3.5 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.
- B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
  - 1. Protect porous materials from water damage.
  - 2. Protect stored and installed material from flowing or standing water.
  - 3. Keep porous and organic materials from coming into prolonged contact with concrete.
  - 4. Remove standing water from decks.
  - 5. Keep deck openings covered or dammed.
- C. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
  - 1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
  - 2. Keep interior spaces reasonably clean and protected from water damage.
  - 3. Periodically collect and remove waste containing cellulose or other organic matter.
  - 4. Discard or replace water-damaged material.
  - 5. Do not install material that is wet.
  - 6. Discard, replace, or clean stored or installed material that begins to grow mold.
  - 7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.
- D. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
  - 1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
  - 2. Use permanent HVAC system to control humidity.
  - 3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
    - a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective.
    - b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.
    - c. Remove materials that cannot be completely restored to their manufactured moisture level within 48 hours.

### 3.6 TRAFFIC CONTROL

- A. Due to the large volume of pedestrian and vehicular traffic within the campus, it shall be the responsibility of the Contractor to provide continuous traffic accessibility to all areas of the campus.
- B. The Contractor shall comply with Connecticut Regulation 13b-17-28, Safety to Traffic, which requires that "When portions of the traveled way are made dangerous for the movement of vehicles or pedestrians, a sufficient number of uniformed police officers, flagmen, or traffic men, shall be employed by the permittee to direct traffic safely through the area."
- C. The requirement to maintain pedestrian and vehicular traffic is further defined in the Connecticut Department of Transportation Specifications Section 9.71, Form 814, which requirements are incorporated herein by reference.
- D. The Contractor may contact the University Police Department, Town of Mansfield Police Department, or other private sources to obtain the necessary manpower to comply with these regulations. The University Representative assigned to the given construction project shall be informed by the General Contractor of his traffic control procedures prior to the commencement of construction.

### 3.7 PROJECT IDENTIFICATION AND SIGNS

- A. Project Identification Signs: Provided and installed by the University.
  - 1. Decorative banners for the site enclosure fencing shall be provided by the Owner and installed by the Contractor.
- B. Temporary Signs: Prepare signs to provide directional information to construction personnel and visitors. Install signs where indicated to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative treated wood or steel. Do not permit installation of unauthorized signs.
- C. Other Signs: Any other signage shall be submitted to the University Representative for approval.

### 3.8 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
  - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
  - 2. Prevent water filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Unless the University Representative requests that it be maintained longer, remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
  - 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
  - 2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
  - 3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."
    - a. Replace air filters and clean inside of ductwork and housings.
    - b. Replace significantly worn parts and parts that have been subject to unusual operating conditions.
    - c. Replace lamps that are burned out or noticeably dimmed by substantial hours of use.
    - d. Restore all existing facilities and grounds used during construction to specified or to original condition.

END OF SECTION 01 50 00

## SECTION 01-5640 – TREE PROTECTION AND PRESERVATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes the protection and stress reduction of existing trees and vegetation that interfere with, or are affected by, execution of the Work, whether temporary or permanent. Work is to be coordinated with Site & Landscape Improvements and Tree Preservation and Transplant Plans
- B. The following specifications apply to work of the Contract Arborist related to Protection and Stress Reduction Measures and coordination and oversight of the Tree Protection and Preservation Program by the Project Arborist. This work includes but is not limited to the following:
  - 1. Coordination of Temporary Tree and Plant Protection
  - 2. Selective tree removals for “Removal By Arborist” (RBA) (Contract Arborist) within Tree Protection Areas (TPAs)
  - 3. Root Pruning
  - 4. Temporary Site and Tree Protection Fencing and temporary sign installation.
  - 5. Composted Mulching
  - 6. Liquid subsurface fertilization
  - 7. Temporary Limb Guying or Clearance Pruning for construction access
  - 8. Seasonal Supplemental Watering
  - 9. Monitoring and Treatment of Tree Health
  - 10. Supersonic Air Tool (SSAT) and Hand Excavation within the Critical Root Zones (CRZs)

#### 1.3 DEFINITIONS

- A. Certified Arborist: Credential of an individual arborist issued and administered by the International Society of Arboriculture. This credential must be current and valid to qualify to use the copyrighted designation of “Certified Arborist”. Refer to [www.isa-arbor.com](http://www.isa-arbor.com) for additional information.
- B. Contract Arborist: Arboricultural firm contracted to implement the approved tree preservation plans on site. All crews’ conduction arboricultural operations on site shall consist of at least one Certified Arborist who directly oversees all work by that crew. Arboricultural operations include, but are not limited to, pruning, tree protection device installation and maintenance (fence, matting, etc.), root pruning, air tool root excavation/exploration (SSAT), soil care activities, soil testing, mulch application, tree inspections, pesticide/chemical applications and tree removal. Special

qualifications submittal is required for review and approval below. Contract Arborist will be sub-contracted by the general contractor.

- C. Tree Protection Area (TPA): Area indicated on Drawings surrounding individual trees or groups of trees to be protected during construction.
- D. Supersonic Airtool (SSAT): Hand held tool designed to focus highly compressed air (90-125 psi) provided from a large air compressor (185-375 cfm) at speeds close to 1400 mph at the tip of the tool. Widely used by arboricultural firms and consultants for multiple purposes including but not limited to: root collar investigation, CRZ investigation, root pruning (especially large roots > 1.5" diameter or where existing underground cables or conduits are located, radial mulching and restoration of compacted soils, excavation for utilities within protected CRZs to minimize root damage from constriction.
- E. Tree Removal by Arborist: Action whereby the Contract Arborist removes trees designated for "Removal by Arborist" selected from inside the TPAs. Trees shall be taken down by hand sectionally, or directionally felled to minimize damage to adjacent tree canopies, root systems, or adjacent structures. Work shall be completed by a qualified contract arborist.
- F. Crown Pruning: Action by the Contract Arborist of pruning specific tree limbs to improve tree health, reduce hazard, and / or provide construction clearance.
- G. Supportive Cabling: Installation of supportive cabling for designated tree branches due to weak branch attachments.
- H. Root Pruning: Action indicated on Drawings to provide a more suitable cut for protected tree roots to minimize ripped or torn roots during excavations and grading with standard construction equipment. Various methods may be used.
- I. Mulching of Trees: Application of a wood mulch product to areas surrounding designated trees. Mulch increases moisture-holding capacity, helps mitigate soil compaction, and increases needed soil organic composition.
- J. Soil Amendments: Various product components applied to existing soil environment of protected trees, as indicated on Plan Notes.
- K. Tree Growth Regulator (*Paclobutrazol*): Products applied to designated trees used to regulate plant growth in such a way as to restrict canopy growth and free stored or produced energy for other uses in the tree. For highly impacted trees, more energy may be available for fibrous root growth (to combat root loss), thicker darker leaves (allowing for increased photosynthesis, and increased drought tolerance), and pest tolerance (often an issue with construction stressed trees); among other potential benefits.
- L. Limits of Disturbance (LOD) (also called Limits of Construction): Specific outer limits of all construction activities for the entire project.
- M. DBH (Diameter at Breast Height): Tree trunk diameter measured at 4.5 feet above grade.

1.4 SUBMITTALS

- A. The Contract Arborist shall provide submittals as follows:
1. Product Data: For each type of product indicated
  2. Certification: For each phase, the Contract Arborist shall certify for each tree designated to remain has been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.
  3. Qualification Data: For Contract Arborist Firm Qualifications, submit firm and individual qualifications as follows:
    - a. Submit a minimum of two resumes and detailed qualifications from staff or team individuals assigned to this project as detailed under Quality Assurance below. Due to the complexity of this project, standard arboricultural experience may not qualify.
    - b. Provide references for above from a minimum of three commercial, non-governmental or governmental projects for whom similar tree preservation programs have been successfully implemented. Include the following information:
      - 1) Project Name, size and scope
      - 2) Number and species of trees involved
      - 3) Relevant photos or aerials
      - 4) Tree preservation budget
      - 5) Scope of services provided
      - 6) Name and contact for project owner, designer, or contractor.
  4. Pedestrian / Property Protection Plan: Contract Arborist to submit a written plan describing all protective measures proposed to be used to minimize potential impact to pedestrians, parked cars, workers and other public and private property. Protection measures shall be required for all on-site tree care activities including but not limited to Supersonic Airtool excavation, root pruning, canopy pruning, etc.
  5. Maintenance Prescription: Contract Arborist shall submit for care and protection of trees as a result of construction, changes in weather patterns or events, and response in health from individual trees during and after completing the Work.
  6. Soil Samples: Submit soil sample for analysis during site work phase of this project. Take those samples during April through October. Take representative soil samples from all areas of protected trees (landscape areas and street tree planting pits). Samples and procedures per local cooperative extension shall be followed. Forward reports to Engineer and Project Arborist.
  7. Soil Amendments: Contract Arborist shall submit specific fertilizer formulations, application rates and methods for review by Project Arborist. All fertilization and soil amendments shall be in conformance with soil test results.
  8. Site Documentation: Submit weekly reports to owner containing complete documentation of all tree impacts and tree preservation activities including but not limited to: root pruning, tree protection fencing, excavation within critical root zones, tree fertilization or other treatments, etc. Documentation shall include tree numbers of trees impacted and / or treated. Complete daily photographic record is also required.



9. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damaged caused by construction activities.
  - a. Use sufficiently detailed photographs or videotape.
  - b. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

## 1.5 QUALITY ASSURANCE

- A. On-Site Arborist (individual) Qualifications: An arborist certified by the International Society of Arboriculture (ISA) and licensed in the jurisdiction where project is located. All work performed by Contract Arborist including any oversight and documentation work, shall be performed or directly supervised by at least one on-site arborist with these minimum qualifications.
- B. Contract Arborist Firm Qualifications:
  1. Contract Arborist Firm shall comply with the following:
    - a. Established business with documented experience of at least five years.
    - b. Experience working on a minimum of three commercial, nongovernmental or governmental projects where similar tree preservation programs have been successfully implemented.
    - c. Properly licensed and insured to perform arboricultural work in the jurisdiction where the project is located.
  2. Provide names of each individual to comply with the following:
    - a. Minimum BS degrees in forestry, arboriculture, or related field and Certification in ISA.
    - b. Resumes should reflect combined 10 years full time experience on similar tree preservation projects.
    - c. Provide individual(s) names, certifications, and each anticipated role in this project. "Role(s)" shall be defined as one or more of the following:
      - 1) Project Manager
      - 2) Technical Oversight
      - 3) Field Arborist / Technician
  3. For each staff member, list a minimum of three construction projects and a minimum three years' experience in the following technical applications:
    - a. Soil amendment prescriptions and applications
    - b. Supersonic Airtool Excavations for underground utilities exceeding 24" depth.
    - c. Root Protection Matting or similar applications
- C. Publications listed herein are part of this work to extent referenced:
  1. ANSI A300 Standard Practices for Trees, Shrubs, and Other Woody Plant Maintenance.
  2. Part 1-2001, Tree Pruning;
  3. Part 2-3004, Fertilization;
  4. Part 3-2000, Cabling, Bracing, Guying of Established Trees;
  5. Part 4-2002, Lightning Protection Systems;
  6. ANSI Z133.1 – 1994 and most recent updates, Tree Care Operations – Safety Requirements

- D. Fertilizer and pesticide will be applied in strict accordance with the manufacturers label instructions and applicable federal, state, and local requirements. Fertilizer, soil conditioners, and pesticide applications must be approved by the owner prior to application. Material Safety Data Sheets (MSDS) will be available for fertilizers and pesticides in the Contract Arborists' possession while on the site.
- E. Pre-Construction Meeting: Conduct meeting at the project site prior to commencement of any projected related site activities.
  - 1. Contract Arborist, Project Arborist, Project Design Team, Owner and Contractors shall attend.
  - 2. Review methods and procedures related to tree protection and preservation including, but not limited to, the following:
    - a. Construction schedule – verify availability of material, personnel, and equipment needed to make progress and avoid delays.
    - b. Enforcement of requirements for tree protection areas.
    - c. Responsibilities of all parties, including coordination, access and timing requirements.
    - d. Field quality control

## 1.6 PROJECT CONDITIONS

- A. The following practices are prohibited within all tree protection areas except as specifically indicated herein:
  - 1. Storage or stockpiling of construction materials, chemicals, debris, or excavation materials.
  - 2. Parking vehicles, trailers or equipment.
  - 3. Foot traffic.
  - 4. Erection of sheds or structures.
  - 5. Impoundment or discharge of water.
  - 6. Excavation or other hand or mechanical digging unless otherwise indicated.
  - 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- B. Do not direct vehicle or equipment exhaust toward protection zones.
- C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Temporary Tree Protection Fence

1. Chain-Link Fence: Galvanized steel chain-link fence fabric of 10 – 11 gauge wire fabric; 6 feet high; with 1.9-inch diameter line posts; 2 3/8” inch diameter terminal and corner posts; with tie wires, hog ring ties, gates, and other accessories for a temporary fence system.
- B. Wood Chip Mulch
  1. Double ground hardwood, aged a minimum 6 months from production, free from deleterious materials. Green chips or mulch not aged at least 6 months shall not be used. No walnut mulch shall be used. Submittal shall include original material source(s), number and type of grindings / chippings, duration of aging, timing of turning / aeration.
- C. Hardwood Destruction Borer / Beetle Control: Bifenthrin, such as Onyx or equivalent. Applied per label.
- D. Tree Growth Regulator (*Paclobutrazol*)
  1. Paclobutrazol is a compound used to regulate plant growth in such a way as to restrict canopy growth and free stored or produced energy for other uses in the tree. For highly impacted trees, this means more energy may be made available for fibrous root growth (to combat root loss), thicker darker leaves (allowing for increased photosynthesis, and increased drought tolerance), and pest suppression (often an issue with construction stressed trees); among countless other potential benefits. Trade name Cambistat® or equal.
- E. Soil Care/Soil Amendments
  1. Fertilizer and soil amendment selection shall be based upon soil test results and recommendations.

### PART 3 - EXECUTION

#### 3.1 TREE REMOVAL

- A. All trees and shrubs or hedges designated for removal shall be marked in red for review and approval by Owner.
- B. All trees designated for removal, shall be taken down sectionally, or directionally felled to minimize damage to adjacent tree canopies or root systems by a qualified Contract Arborist. Gouges in turf from impacts shall be filled with topsoil and seeded at the direction of the Owner. Damage to adjacent trees shall be reviewed by Project Arborist and Owner for remedial recommendations or replacement.
- C. All work shall be done by hand, bucket truck or crane operated equipment.
- D. Motorized equipment shall operate on existing pavement and not enter tree preservation areas without prior approval. Temporary root protection matting may be required for such access to prevent access to prevent rutting and compaction.

- E. Stumps shall be ground to 8" below grade and grindings raked and removed from site; backfill holes with approved topsoil and mulch or seed per Owner. Coordinate with underground utilities locators prior to grinding. All stump grinding shall be performed by the Contract Arborist.
  - 1. For tree pits where a new tree is proposed, the stump may be ground out completely (as determined by the Contract Arborist) to allow the proposed tree to be planted. Backfill as above.
  - 2. Only trees with stumps within deep excavations may have stumps removed by excavator. Stump excavation to be performed by Site Contractor and under the direct supervision of the Contract Arborist.
- F. Removal of shrubs and hedges designated for removal for each phase shall be cut and stumps ground out or hand dug to remove stumps. Prior to removal, verify with Owner.
- G. Remove all wood debris from site promptly. All wood debris shall be removed each day unless directed otherwise by Owner.

### 3.2 TREE PROTECTION AND STRESS REDUCTION MEASURES

- A. General
  - 1. Installation/implementation of the following measures shall be performed in the field by and ISA Certified Arborist as provided by the Contract Arborist
  - 2. All work, substitutions and /or modifications shall be subject to review and approval by the Owner University Tree Warden
  - 3. All work shall conform to applicable federal, state and local regulations and industry standards.
  - 4. The Contract Arborist shall be responsible for all items in this section.
- B. Coordination of Temporary Tree and Plant Protection and Transplants. The work of the Contract Arborist coordination to include but not limited to the following:
  - 1. Existing underground utility marker conflicts brought to the attention of the Contractor for resolution as well uncovered underground utilities as a result of work.
  - 2. Coordinate necessary survey layout of proposed construction elements in order to provide accurate locations for tree protection measures.
  - 3. Layout location of designated tree protection based upon proposed construction and methods of construction for that area.
  - 4. Site walk with Project Arborist and Site Superintendent to verify location of all tree protection measures prior to execution.

5. Notify Site Superintendent and Project Arborist if construction adjacent to tree protection does not appear to follow specifications or prior agreement or conflicts with tree protection seem eminent.
6. Coordinate with Site Superintendent, Construction Managers, Owner, and Security for access of deliveries, crews, equipment, start up, and cleanup of each item of work.
7. Provide “as built” of any change to location of tree protection.
8. Attend progress meetings as requested.
9. Provide submittals as required.
10. Notify Superintendent and Project Arborist of any breach or damage to tree protection requiring attention.

C. Pruning and Supportive Cabling

1. Specific canopy pruning for tree health, risk reduction, and construction clearance per Plan documents
2. Size, health, species, and impact from proposed construction will be taken into consideration in determining pruning type for each designated tree. Risk Reduction Pruning will remove dead, dying, and declining limbs 2” diameter and larger. No interior green branching including sprouts will be removed unless approved by Project Arborist.
3. Contractor, Contract Arborist, and Owner shall meet at site to determine overhead clearance conflicts between trees and construction equipment/activities to prevent breakage, impacts, or aesthetic concerns. Project Arborist may be consulted if questions arise.
4. All work shall conform to ANSI A-300 arboriculture standards. An aerial assessment shall be made for all trees climbed to report any structural weakness of concern to the Project Arborist and Owner.
5. Prior to climbing any tree a risk assessment will be performed using visual, sounding, or basic drilling as needed by the Contract Arborist. Trees deemed high risk should not be climbed; alternate methods should be used and the tree reported to the Project Arborist and Owner immediately.
6. Supportive Cabling of weak unions may be recommended by the Contract Arborist if the need is discovered during pruning operations. ANSI Standards apply. Cabling may be included only if submitted to the Engineer and Add Alts approved by the Owner

D. Root Prune

1. Purpose of the root pruning is to provide a more suitable cut so as to not rip or tear roots during excavations and grading with standard construction equipment. The exact location and depth along the LOD or edge of utility excavation will be determined during the layout by an ISA Certified Arborist.

2. Root Pruning for urban sites with specimen trees or for transplanting requires the use of SSAT excavation for hand pruning. Refer to SSAT specifications in the section
  3. Sufficient moisture is necessary for reducing the level of dust, increase work efficiency, and provide a hospitable environment of the tree roots and pedestrians.
  4. At a pre-work site inspection by the Contract Arborist more than 72 hours in advance of work start, subsurface probing to 24-36" with a tile probe or similar method will determine if sufficient soil moisture exists. If sufficient moisture is not found, immediate coordination with the site managers shall be made to irrigate the proposed work areas. Methodology may be soaker hose, sprinklers, soaker cans with small drilled holes to release water slowly or other methods. A second follow up inspection shall be made to determine final sufficiency to begin.
  5. All root pruning operations shall be performed by the Contract Arborist and directed in the field by and ISA Certified Arborist with documented experience in similar SSAT excavation and root pruning.
- E. Temporary Tree Protection Fence
1. Type and placement of fence to be designated on Plans and Details.
  2. Attach tree protection area signs @ 30' feet spacing facing construction Limits of Disturbance (LOD). For fence lower than 6' feet in height, attach owner provided flagging as directed.
  3. Tree protection area signs shall be high visibility and all weather to last duration of the project / phase.
  4. Install tree protection after root pruning if shown, and prior to demolition, clearing & excavation.
  5. Install tree protection at 6" – 12" outside (construction side) of the Root Prune line or within the Root Prune Trench.
  6. Silt fence will be outside (construction side) the tree protection fence, unless super silt fence is used in lieu of tree protection. Trenchless installation method shall be employed per Detail if Root Protection Matting is designated.
  7. Exact placement of fence will be determined in walk-through with Contractor, Project Arborist, Contract Arborist, Engineer, and Owner.
  8. Sequencing of the tree protection fence will be determined during the initial site walk. In any case, no construction activities shall occur in each phase or section until approved protection is installed.
- F. Hand Excavation within Tree Protection Areas
1. For excavation within CRZ areas of trees to remain, the intent is to minimize tree and root damage from excavation activities.

2. Excavation shall be performed using SSAT, hand tools (shovels, etc.), or other approved non-damaging method. Roots shall not be damaged by the excavation except for approved root pruning.
3. Refer to “Supersonic Airtool Excavation” and “Construction Oversight by Arborist” specifications in this section for additional requirements.
4. All work shall be directly supervised by ISA Certified Arborist (provided by the Contract Arborist) in collaboration with the Owner’s trades and subcontractors.
5. RPM (Root Protection Matting) shall be installed along trench sides to allow for temporary soil stockpile and access.
6. Excavate along the edge of the proposed trench closest to the trees to be protected as shown on the plans. Roots shall be uncovered and care taken to avoid damage to roots and bark.
7. Contract Arborist shall prune the exposed roots. Excavation shall not extend beyond the line where roots were pruned.
8. Contractor may proceed with conventional excavation methods or with hand excavation methods if clearance to the tree is inadequate for equipment access.
9. No roots shall be cut by the contractor.

G. Supersonic Airtool (SSAT) Excavation

1. Refer to “Hand Excavation within Tree Protection Areas” specification in this section for additional requirements
2. At a minimum, all SSAT work shall include the use of a barrier system such as temporary walls or tents to protect property and pedestrians from flying debris.
3. Excavate along the edge of the proposed trench closest to the trees to be protected as shown on the plans. Roots shall be uncovered and care taken to avoid damage to roots and bark.
4. Excavation shall proceed per the “Hand Excavation within Tree Protection Areas” specification in this section.

H. Wood Chip Mulch

1. Mulching for the duration of construction for protection and stress reduction. Mulching will increase moisture-holding capacity, minimize soil compaction, and increase needed organic composition.
2. For individual trees designated on the TPAK within the TPS or curvilinear TPA install mulch to a radius equal to trunk diameter inches equated to mulch ring diameter in feet (24” inch trunk diameter = 24’ feet diameter mulch ring). Where planting pit areas are restricted by hardscape, mulch the greatest area possible.
3. For privately owned trees, any installation is contingent upon receipt of owner’s permission. Owner may decline.

4. For linear TPAs along LOD Install mulch strips a minimum 10' feet wide the length of critical root zones along the outside of the LOD/Root Prune line (just inside the Tree Protection Zone) for designated significant trees impacted by proposed construction.
  5. Motorized equipment shall not enter the Tree Protection Area (TPA) unless specifically approved by the Project Arborist and specific conditions met (RPM, AlturnaMATS, etc.). Any such motorized equipment shall be operated by a certified arborist while inside the TPA.
  6. Do not allow mulch to contact trunk / roof flare.
  7. Mulch depth shall be 3" – 4" inches.
- I. Tree Growth Regulator (*Paclobutrazol*)
1. Paclobutrazol is a compound used to regulate plant growth in such a way as to restrict canopy growth and free stored or produced energy for other uses in the tree. For highly impacted trees, this means more energy may be made available for fibrous root growth (to combat root loss), thicker darker leaves allowing for increased photosynthesis, and increased drought tolerance.
  2. Specific methods and dosages are contained on the label and are determined by size and species, and applied by a state licensed pesticide applicator. Designated trees are shown on the Tree Protection Action Key (TPAK).
- J. Supplemental Watering
1. This action is for high impact trees of significance during seasonal drought times of project construction. Based upon the number and size of trees various strategies can be considered to maintain adequate soil moisture during these times. These strategies may include but are not limited to the following:
    - a. Fire hydrant connection battery powered timer and drip irrigation hose/tubing;
    - b. Water tank truck and hand applied as directed;
    - c. Temporary above grade poly tank with battery-powered timers for drip or soaker hoses at each TPA.
    - d. 30-50 gallon watering cans with 6 – 8 drilled holes in bottom to allow slow seeping of water; spacing and rotation to reach desired gallons. Equivalent means of affectively watering trees as approved by Engineer or Project Arborist.
  2. Trees requiring this treatment are indicated in the TPAK. Other trees will not receive this treatment.
  3. Drought times shall be defined as:
    - a. Periods during the growing season of two weeks or longer, where daytime high temperatures reach 80 degrees Fahrenheit or higher and less than 3/4" rainfall are recorded per week. Or,
    - b. Periods during the growing season designated as "abnormally dry" or "drought" of any severity, by the U.S. Drought Monitor: <http://droughtmonitor.unl.edu/> Or,
    - c. Any period of extraordinary circumstance, as determined by the project arborist or engineer



4. A prescription for the number of gallons and strategy for watering designated trees will be developed. Large mature trees with impacts to root systems require as much as 100 – 250 gallons per week during 90 degree days during summer drought times.
5. Periodic inspections by an ISA Certified Arborist (provided by the Contract Arborist) as this time are critical. Depth of moisture in soils shall be determined by soil sample tube or other exploratory means.
6. Minimum watering shall be considered to be 6 applications per growing season typically July through October with the exact timing and duration to be determined by the ISA Arborist.

K. Overhead Clearance

1. Trees to remain shall be assessed prior to construction for overhead clearance for construction activities. Contract Arborist shall recommend either canopy pruning, temporary guying/tying of select limbs, or alternative construction methods.
2. Pruning for clearance shall not remove branches above 12' feet or over 6" inches diameter
3. All pruning proposed by the Contractor and / or Contract Arborist shall first be reviewed and approved by the Owner and Project Arborist.
4. Equipment exhaust should be directed away from trees as much as possible. Stationary equipment shall not exhaust directly under or toward trees.
5. Contractor shall use appropriate equipment near trees to ensure that trees are not damaged by construction. Contractor shall provide any specialized equipment needed at no additional cost to the owner.
6. Any pruning shall also conform to the pruning specifications in this section.

L. Soil Tests and Soil Care/Fertilization

1. Initial soil testing within tree protection areas is required. Conduct individual soil tests for separate tree protection areas (small adjacent areas may be tested together). Soil test shall be a representative sample from each area. Soil testing shall include a texture analysis (sand, silt, and clay percentages), soluble salts, and sodium tests.
2. Treatments to the tree protection areas for specified trees (see TPAK) shall be based on the results of the soil analysis. Fertilization should be consistent with the recommendations of the ANSI A-300 (Part 2) Tree, Shrub, and Other Woody Plant Maintenance – Standard Practices (Fertilization) 2004, except as described herein.
3. Application rates shall not exceed a rate of 1 pound of actual nitrogen per 1,000 square feet annually. Fertilizer used should include humic acids, soluble seaweed extracts and soil biological inoculants (mycorrhizae, etc.).
4. Applications to confined areas (i.e. street tree planting pits) should be made by soil injection. In areas where adequate application rates cannot be achieved, injection should be made to the point of refusal.

### 3.3 FIELD QUALITY CONTROL AND MONITORING

#### A. Tree Condition Monitoring

1. An ISA Certified Arborist (provided by the Contract Arborist) shall perform monitoring twice per month year round to monitor insects, disease, soil moisture levels, weather, and health changes on all trees designated on Tree Protection Action Key.
2. The monitoring will include a report that details problematic areas that have been addressed, treatments provided to reduce the problem, and anticipated treatments forecast for 30 days. This report will be forwarded to the Project Arborist, Engineer and Owner for documentation.
3. Any treatments recommended by the Contract Arborist not already included in the project scope shall be noted in the reports for review by the Project Arborist, Engineer and Owner. No additional work is to be performed unless approved in writing by the Owner.

#### B. Construction Oversight by Contract Arborist

1. Any work within CRZs of retained trees shall be directly supervised by the Contract Arborist.
2. If roots are encountered during excavation, work shall progress as directed by the Contract Arborist. Contract Arborist, in coordination with the construction and design teams, shall determine appropriate means and methods to address the roots. Options may include, but not be limited to, severing the roots, hand or SSAT excavation. Contractor shall not cut roots.
3. Refer to “Hand Excavation within Tree Protection Areas” specification in the section.
4. All work shall be documented thoroughly, including photo documentation. Refer to site documentation submittal requirements.

### 3.4 CONTRACTOR DAMAGE AND PENALTIES

#### A. Remedial Measures

1. Any damage caused to the trees by the work of this contract through negligence by the contractor shall be immediately remedied by the contractor. Contractor shall be responsible for any associated costs.
2. Remedial work may include pruning, cabling, or any other measures up to and including removal and replacement, as determined by the Project Arborist and Engineer.
3. Remedial work shall be performed by the Contract Arborist, as approved by the Project Arborist and Engineer.
4. All required remedial work shall be performed to the satisfaction of the Project Arborist and Engineer, at no additional cost to the owner.

#### B. Tree Replacement

1. If damage to any tree is severe, because of negligence by the contractor as determined by the Project Arborist and Engineer, it shall be replaced with a new tree of equal size caliper and species as that of the damaged tree.
2. If a replacement tree of equal size and caliper is not possible as determined by the Project Arborist and Engineer, it shall be replaced on and inch by inch basis with new trees of a minimum caliper size of 2"-3".
3. Replacement trees shall be supplied and installed at no additional costs to the owner, including all incidental costs including the costs of inspection of the tree at the nursery and any other incidental costs associated with tree replacement.

END OF SECTION 01-5640

## SECTION 01 57 13 - TEMPORARY EROSION AND SEDIMENTATION CONTROLS

### PART 1 GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Installation of temporary erosion and sedimentation control measures
2. Maintenance of temporary erosion and sedimentation control measures.
3. Monitoring of site condition and installation of supplemental temporary erosion and sedimentation control measures.
4. Sediment removal and disposal
5. Temporary seeding or other surface stabilization measures.
6. Removal of temporary erosion and sedimentation control measures.
7. Monitoring, documentation, and recordkeeping.
8. Installation of permanent erosion control materials.
9. Final cleanup.

B. Erosion and sediment control techniques include, but are in no way limited to, silt fence, hay bales, drainage structure inserts/filters, mulching with hay/straw, netting/matting, grassing, stone dikes/berms/check-dams, compost blankets and berms, barriers, diversions, traps, basins, and appurtenances which will ensure that erosion and sediment pollution will be either eliminated or maintained within acceptable limits.

C. The measures specified herein are the minimum requirements which Contractor shall comply to control erosion and siltation throughout execution of the work. Contractor shall provide additional work if necessary to control erosion and siltation throughout the duration of the construction as conditions dictate, or as directed by Engineer.

#### 1.2 SUBMITTALS

- A. Submit material specifications and shop drawings for all materials furnished under this Section.
- B. Prior to the start of the construction, submit schedule for the construction of required stormwater detention basins, temporary and permanent erosion and sedimentation control measures, clearing and grubbing, grading, structures at watercourses, construction, and paving.
- C. During construction, submit to Engineer schedule changes that affect timing of construction.
- D. Submit copies of all inspection and maintenance report forms.

### 1.3 REFERENCES

- A. Reference herein to any technical society, organization, group or regulation are made in accordance with the following abbreviations and, unless otherwise noted or specified, all work under this Section shall conform to the latest edition as applicable.
- B. Regulations of Connecticut State Agencies (RCSA)
  - 1. 22a-315-10 through 19, Soil and Water Conservation
- C. Connecticut Department of Energy and Environmental Protection (DEEP)
  - 1. Connecticut Guidelines for Soil Erosion and Sediment Control, DEP Bulletin 34, State of Connecticut Council on Soil and Water Conservation, 2002.
- D. State of Connecticut Department of Transportation (ConnDOT)
  - 1. Standard Specifications for Roads, Bridges and Incidental Construction, Form 816, 2004 and any supplements.

### 1.4 PERMIT CONDITIONS

- A. Contractor and Subcontractors are bound to comply with any project-related permits obtained by Owner or Engineer for the work of the project. Such permits will affect performance of the work, and Contractor and Subcontractors are bound to comply with requirements of such permit and representations contained in permit application as though Contractor and Subcontractor were the Permittee/permit-holder. Requirements and conditions set forth in Owner or Engineer-obtained project-related permits and permit applications shall be binding on Contractor just as any Specification would be.

### 1.5 QUALITY CONTROL

- A. Comply with applicable provisions of the Connecticut Department of Energy and Environmental Protection (DEEP) General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities, (DEP-PED-GP-015) modified April 8, 2004 or latest revision thereof. Conditions of such General Permit, other conditions of approval or authorizations, and associated Stormwater Pollution Control Plan (SWPCP) shall become part of the Contract Documents.
- B. Contractor shall be responsible for the timely installation and maintenance of all sedimentation control devices necessary to prevent the erosion of soil or movement of sediment from construction activities to off-site areas via surface runoff or underground drainage systems. Measures in addition to those shown on the Drawings necessary to prevent the movement of sediment off site shall be installed, maintained, removed, and cleaned up at the expense of Contractor.
- C. Engineer has the authority to order immediate, additional, temporary control measures to prevent contamination of adjacent streams or other watercourses, or other areas of water impoundment and damage by erosion.
- D. If Engineer observes construction procedures and operations that jeopardize erosion control provisions, Engineer will notify Contractor. If such construction procedures and operations are not corrected promptly, Engineer may suspend the performance of any or all construction

until corrections have been made, and such suspension shall not be the basis of any claim by Contractor for additional compensation, nor for an extension of time to complete the Work.

- E. Should construction materials be washed away or otherwise rendered ineffective in the opinion of Engineer during the progression of the Work, Contractor shall replace the installations at no additional cost to the Owner.

1.6 COORDINATION WITH PERMANENT EROSION CONTROL PROVISIONS

- A. The temporary control provisions shall be coordinated with the permanent erosion control features to the extent practical to ensure economical, effective and continuous erosion control throughout the construction and post-construction period.

PART 2 PRODUCTS

2.1 HAY BALES

- A. Hay bales shall be made of cut hay with forty pounds minimum weight and 120 pounds maximum weight. Bales shall be free of rotten or degraded hay, significant splits or voids. Hay bales shall be held together with a minimum of two bands made of either wire or heavy twine.
- B. Stakes to anchor the bales shall be a minimum of 36 inches long and made of hardwood with a minimum dimension of 1½-inch by 1½-inch normal size. Metal stakes may be used instead of wooden stakes. Metal stakes shall be round, “U”, “T”, “L”, or “C” shaped with a minimum weight of 0.5 pounds per foot.
- C. Replace individual hay bales upon loss of 30% of original mass or volume, whichever is less.

2.2 SILT FENCE

- A. Woven Polypropylene geotextile having a minimum weight of 3.1 ounces per square yard conforming to the following:

Mechanical and Physical Properties of Silt Fence Geotextile

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value
Weight	ASTM D 3776	oz/yd <sup>2</sup>	5.6
Grab Tensile Strength	ASTM D 4632	Pounds	60
Grab Elongation (Max percent)	ASTM D 4632	Percent (%)	15-30
Trapezoidal Tear	ASTM D 4533	Pounds	30
Puncture	ASTM D 4833	Pounds	30
Mullen Burst	ASTM D 3786	psi	150-200
Permittivity	ASTM D 4491	Sec <sup>-1</sup>	0.15
Flow Rate	ASTM D 4491	gal/min/ft <sup>2</sup>	15-20
Apparent Opening Size	ASTM D 4751	(U.S. Sieve)	30-35
UV Resistance (at 500 hours)	ASTM D 4355	% strength retained	70

- B. Silt fence shall be constructed of a minimum thirty-six (36) inch wide continuous woven geotextile. The material shall have a high sediment filtration capacity, high slurry flow and minimum clogging characteristics. Edges of the fabric shall be finished to prevent the outer fibers from pulling away from the geotextile. Geotextile shall be free of defects or flaws that significantly affect its physical and/or filtering properties.
- C. Fabric shall be securely fastened to stakes a minimum of 42 inches long and made of hardwood with a minimum dimension of 1½ inch by 1½ inch normal size such that a 6 to 8 inch length of fabric is unattached at the bottom for anchorage in soil. Metal stakes may be used instead of wooden stakes. Metal stakes shall be round, “U”, “T”, “L”, or “C” shaped with a minimum weight of 0.5 pounds per foot. Stakes shall be spaced not greater than ten feet apart. When required, wire or another type of support shall be constructed between the geotextile fabric and the posts to improve the load carrying capacity of the silt fence.

### 2.3 CATCH BASIN INSERT

- A. Manufactured catch basin insert of woven polypropylene geotextile with integral lifting loops or straps conforming to the following:

#### Mechanical and Physical Properties of Catch Basin Insert

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value
Grab Tensile Strength	ASTM D 4632	Pounds	350
Grab Elongation (Max percent)	ASTM D 4632	Percent (%)	30
Trapezoidal Tear	ASTM D 4533	Pounds	120
Puncture	ASTM D 4833	Pounds	140
Mullen Burst	ASTM D 3786	psi	600
Permittivity	ASTM D 4491	gal/min/sq ft	0.3
Flow Rate	ASTM D 4491	gal/min/ft <sup>2</sup>	150
Apparent Opening Size	ASTM D 4751	(U.S. Sieve)	40
UV Resistance (at 500 hours)	ASTM D 4355	% strength retained	90

Note: Catch basin inserts for catch basins with curb openings shall be equipped with integral curb deflector.

### 2.4 STRAW MULCH

- A. Straw mulch shall be comprised of threshold straw of oats, wheat, barely, or rye that is free from noxious weeds, mold or other objectionable material. Straw mulch shall contain at least 50 percent by weight of material to be 10-in or longer. Straw shall be in an air-dry condition and suitable for placement with blower equipment. Straw mulch shall be utilized on all newly graded areas with slopes exceeding 5% to protect areas against washouts and erosion unless other erosion control measures are provided.

### 2.5 FILTER BERM COMPOST

- A. Where establishing vegetation is not planned, compost shall be a decomposed, weed free organic matter source derived from agricultural, food, or industrial residuals; biosolids (treated sewage sludge); yard trimmings; or source-separated or mixed solid waste. Compost

shall possess a moisture content of 30 to 60% and a organic matter content of 25 to 100%. The maximum particle length shall be 6", and 100% passing a 3", 90 to 100% passing a 1", 70% to 100% passing a 3/4", and 30% to 75% passing a 1/4" screen. However, no more than 50% passing a 1/4" screen in high rainfall/flow rate situations.

- B. Where establishing vegetation is planned, compost shall be use a well decomposed, stable, weed free organic matter source derived from agricultural, food, or industrial residuals; biosolids (treated sewage sludge); yard trimmings; or source-separated or mixed solid waste. Compost shall possess a moisture content of 30 to 60%, a pH of 6.0 to 8.5 and an organic matter content of 25 to 65%. The maximum particle length shall be 6", and 100% passing a 3", 90 to 100% passing a 1", 70% to 100% passing a 3/4", and 30% to 75% passing a 1/4" screen. However, no more than 60% passing a 1/4" in high rainfall/flow rate situations. It shall contain no substances toxic to plants, shall possess no objectionable odors, and shall not resemble the raw material from which it was derived.

## 2.6 COMPOST SOIL BLANKET

- A. Compost soil blankets may be utilized on slopes of up to 2:1.
- B. Slightly scarify slopes and remove large clods, rocks, stumps, roots larger than 2 inches in diameter and debris on slopes, where vegetation is to be established. This soil preparation step may be eliminated where approved by the Landscape Architect/Designer, or where seeding or planting isn't planned. Track (compact) slope using a bulldozer before applying compost.
- C. Apply compost at the following rates:

Compost Application Rates

Annual Rainfall/Flow Rate	Total Precipitation & Rainfall Erosivity Index	Application Rate for Slopes to be Vegetated (Note 1)	Application Rate for Slopes not being Unvegetated
Low	1-25" & 20 - 90	1/2 - 3/4 "	1" - 1 1/2"
Average	26-50" & 91 - 200	3/4 - 1"	1 1/2" - 2"
High	51" and above, & 201 and above	1-2"	2-4"

- D. Lower application rates indicated for slopes to be vegetated should only be used in conjunction with seeding, and for compost blankets applied during the prescribed planting season for the particular region.
- E. Compost shall be uniformly applied using an approved spreader unit, including bulldozers, side discharge manure spreaders, etc. Track (compact) the compost layer using a bulldozer or other appropriate equipment. (This step may be eliminated where impractical or where deemed unnecessary by the Landscape Architect/Designer.) Alternatively, apply compost using a pneumatic (blower) unit, or other unit that propels the product directly at the soil surface, thereby preventing water from moving between the soil-compost interface. Thorough watering may be used to improve settling of the compost. Apply compost layer approximately 3 feet (90 cm) over the top of the slope, or overlap it into existing vegetation.
- F. On highly unstable soils, use compost in conjunction with appropriate structural measures.



- G. Dry or hydraulic seeding may be completed following compost application, as required, or during the compost application itself, where a pneumatic unit is used to apply the compost.

2.7 STONE CHECK DAM

- A. Stone shall be graded as follows:

Gradation of Stone for Check Dam (ConnDOT M.01.01 Grading No. 3)

Sieve	Percent Passing by Weight
2 1/2"	100
2"	90-100
1 1/2"	35-70
1	0-15
1/2"	0-5

Stone shall be sound, tough, durable, angular, not subject to disintegration, on exposure to water, or weathering, be chemically stable and shall be suitable in all other respects for the purpose intended.

- B. Geotextile may be used under the stone to provide a stable foundation and to facilitate removal of the stone.

2.8 EROSION CONTROL SEED MIXTURE

Erosion Control Seed

Species (Note 1)	Application Rate, Pounds Per Acre	Application rate, Pounds Per 1,000 sf	Optimum Seed Depth, inches (Note 2)	Optimum Seeding Dates (Note 3)
Annual ryegrass <i>Lolium multiflorum</i>	40	1.00	0.5	3/1 - 6/15 and 8/1 - 10/15
Perennial ryegrass <i>Lolium perenne</i>	40	1.00	0.5	3/15 - 7/1 and 8/1 - 10/15
Winter Rye <i>Secale cereale</i>	120	3.00	1.00	4/5 - 7/1 and 8/15 - 10/15
Oats <i>Avena sativa</i>	86	2	1	3/1 - 6/15 and 8/1 - 9/15
Winter Wheat <i>Triticum aestivum</i>	120	3	1	4/15 - 7/1 and 8/15 - 10/15
Millet <i>Echinochloa crusgalli</i>	20	.5	1	5/15 - 7/15
Sudangrass <i>Sorghum sudanese</i>	30	.7	1	5/15 - 8/1
Buckwheat <i>Fagopyrum esculentum</i>	15	.4	1	4/1 - 9/15
Weeping lovegrass <i>Eragostis curbula</i>	5	.2	.25	6/1 - 7/1
ConnDOT All Purpose Mix	150	3.4	.5	3/1 - 6/15 and 8/1 - 10/15

#### Erosion Control Seed Notes:

1 - Listed species may be used in combinations to obtain a broader time spectrum. If used in combinations, reduce each species planting rate by 20% of that listed.

2 - Seed at twice the indicated depth for sandy soils.

3 - May be planted throughout summer if soil moisture is adequate or can be irrigated. Fall seeding may be extended 15 days in the coastal towns.

#### 2.9 EROSION CONTROL MATTING

- A. Temporary Erosion Control Blanket shall be 1) Curlex® Excelsior Blanket, as manufactured by American Excelsior Company, 2) ERO-MAT® V75S(FD), as manufactured by Verdyol Plant Research, Ltd., or 3) Landlok® S2 RD, as manufactured by SI® Geosolutions, or 4) approved equal.
- B. Degradable Erosion Control Fabric Netting shall be Landlok® 407 GR, as manufactured by 1) SI® Geosolutions, or 2) GeoJute® as manufactured by Belton Industries, Inc., or 3) BioNet® S150BN™ Double Net Straw Blanket, as manufactured by North American Green, or 4) approved equal.
- C. Long-Term and Non-degradable Turf Reinforcement Mats shall be 1) Pyramat®, as manufactured by SI® Geosolutions, or 2) Recyclex® Turf Reinforcement Matting, as manufactured by American Excelsior Company, or 3) Vmax3 C350™, as manufactured by North American Green, or 4) approved equal.
- D. Erosion control matting shall be secured with staples or an alternative attachment device such as geotextile pins or plastic pegs as recommended by the manufacturer. The Contractor shall submit a sample of the alternative attachment device for the Engineer's approval prior to installation.

#### PART 3 EXECUTION

##### 3.1 GENERAL

- A. Install erosion and sedimentation control measures as shown on the Drawings prior to any site disturbance.
- B. No work shall be started until erosion control schedules and installation have been accepted by the Engineer.
- C. Engineer has the authority to control the surface area of each material exposed by construction operations and to direct Contractor to immediately provide permanent or temporary pollution control measures to prevent contamination of adjacent watercourses or other areas of water impoundment. Every effort shall be made by Contractor to prevent erosion on the site and abutting properties or areas.
- D. Contractor shall construct all permanent erosion and sediment control features at the earliest practical time as outlined in the accepted schedule. Temporary erosion and sediment control

measures shall be used to correct conditions that develop during construction, which were unforeseen, but are needed prior to installation of permanent control features, or that are needed temporarily to control erosion or sedimentation which develops during construction operations.

- E. Contractor shall limit as necessary the surface area of the earth material exposed to sufficiently maintain and protect the slopes to prevent pollution. Where erosion is likely to be a problem, clearing and grubbing operations shall be scheduled and performed so that grading operations and permanent erosion and sediment control features can follow immediately thereafter, if conditions permit; otherwise, temporary control measures will be required between successive construction stages.
- F. Erosion control features installed by Contractor shall be maintained by Contractor, and he shall remove such installations only upon completion of the work and the site is stabilized or when authorized to do so by Engineer.
- G. Contractor shall operate all equipment and perform all construction operations so as to minimize pollution. Contractor shall cease any of his operations, which will increase pollution during rainstorms.
- H. Failure by Contractor to control erosion, pollution, and siltation shall be cause for the Engineer to employ outside assistance to provide the necessary corrective measures. The cost of such assistance, including engineering costs, will be charged to Contractor and appropriate deductions made to Contractor's payment.

### 3.2 HAY BALES

- A. Hay bales shall be positioned as indicated on the Drawings and/or as necessary to prevent off site movement of sediment produced by, or as a result of, construction activities, or as direct by the Engineer.
- B. Hay bales shall be utilized on all catch basins and drainage facilities on the Project Site to prevent the entry of sediments or other debris. Maintain such protection throughout execution of the work until such drainage facilities have been abandoned/removed.
- C. Bales shall be placed lengthwise with ends of adjacent bales tightly abutting one another to form a continuous barrier. Bales shall be entrenched to a depth of 4 inches and backfilled, with the backfill placed toward the potential source of runoff and sediment. All bales shall be installed so that bindings are oriented around the sides rather than along the tops and bottoms. Each bale shall be anchored with a minimum of two stakes, driving the first stake in each bale towards the previously laid bale to drive the bales together. Stakes must be driven a minimum of 18 inches into the ground. Loose hay shall be inserted between bales as required to prevent water from escaping between the bales.

### 3.3 GEOTEXTILE SILT FENCE

- A. Install a filter fabric silt fence prior to construction and remove after full surface restoration has been achieved. Install silt fence as indicated on the Drawings and/or as necessary to prevent off site movement of sediment produced by, or as a result of, construction activities.

Install as follows:

1. Hand shovel excavate a small trench a minimum of six inches wide by six inches deep on the upslope side of the desired fence line location.
2. Unroll the siltation fence system, position the post in the back of the trench (downhill side), and hammer the post at least 12 inches into the original ground.
3. Fabric rolls shall be spliced at posts. The fabric shall be overlapped six inches, folded over and securely fastened to posts.
4. Lay the bottom 6 inches of the fabric into the trench to prevent undermining by storm water run-off.
5. Backfill the trench and compact. Compaction is necessary to prevent the run-off from eroding the backfill.
6. For slope and swale installations, extend the ends of the trench sufficiently up slope such that the bottom end of the fence will be higher than the top of the lowest portion of the fence.

#### 3.4 CATCH BASIN INLET SEDIMENT CONTROL

- A. Install catch basin inlet sediment control devices in each exiting catch basin as long as it remains in use in accordance with manufacturer's guidelines at the locations shown on the Drawings.
- B. A catch basin sediment filter shall be installed and changed/cleaned per the manufacturer's recommendations, or as directed by the (Insert Name), during construction.
- C. New catch basins shall have a filter installed immediately upon completion of construction. In addition, a hay bale, or similar, barrier shall be installed around the new basin and maintained in place until binder is placed or disturbed areas draining to it are stabilized.
- D. Catch basins with curb openings shall have filter fabric covering the opening and the edges of the fabric shall be secured. A filter boom shall also be placed over the opening.

#### 3.5 TEMPORARY SEDIMENT BASINS

- A. Temporary sedimentation basins shall be employed as required during construction. Sedimentation shall be periodically removed from the basins and from behind erosion and sedimentation control devices. The Contractor shall direct all possible site runoff to the temporary sedimentation basins.
- B. The temporary sedimentation basins shall be maintained from the start of construction until construction of the permanent detention basins is completed and perimeter areas are stabilized.

#### 3.6 TEMPORARY MULCHING

- A. Apply temporary mulch to areas where rough grading has been completed but final grading is not anticipated to begin within 30 calendar days of the completion of rough grading or where final grading has been completed but seeding is not anticipated for 20 days.

1. Straw/Hay Mulch

Exposure Period: 6 months

Application Method: By hand or machine

Application Rate: 110 lbs/1,000 square feet.

2. Bark Chips/Shredded Bark

Exposure Period: Less than one year

Application Method: By hand or machine

Application Rate: 6 cubic yards /1,000 square feet.

3.7 TEMPORARY EROSION CONTROL MATS

- A. Erosion control mats shall be furnished, installed, maintained, and later removed in ditches or swales, on embankment slopes, and excavation slopes at the locations shown on the Drawings in accordance with the manufacturer's recommendations.
- B. All areas shall be smooth graded and compacted. Remove all rocks, dirt clods, vegetation and other obstructions that may cause damage to the mats.
- C. Unroll mats parallel to the direction of water flow and lay flat against the ground. Overlap roll ends 1-2 feet with upslope mat on the top to prevent uplift of mat end by water flow. Overlay adjacent edges of mat by six inches. Extend mat 2-3 feet above the crest of steep slopes and anchor by excavating a 6-inch deep trench, and secure end of mat in trench, backfill and compact. Secure mat to the ground using staples or pins furnished by manufacturer of mat.
- D. When no longer required, as determined by the Engineer, temporary erosion control mats shall become the property of the Contractor and be removed and properly disposed.
- E. Ground disturbances, including holes and depressions caused by the installation and removal of the temporary erosion control blanket shall be backfilled and repaired.

3.8 INSPECTIONS AND MAINTENANCE

- A. Contractor is responsible to maintain the sediment and erosion control features at all times throughout the project duration and until the completion certification and approval has been issued.
- B. Regular erosion and sediment control system inspections shall be conducted by Contractor throughout the project duration. At a minimum, Contractor shall conduct daily inspections and maintain erosion control systems in good operating condition. Report the results of the inspection and the recommended maintenance and/or repair requirements to Engineer.
- C. Additional inspections may be required and/or directed prior to, or immediately following, a storm event >0.1 inches. Repairs shall be made as necessary.

- D. In the event that the sedimentation and erosion control measures employed by Contractor prove to be inadequate as determined by the Engineer, Contractor shall adjust operations to the extent necessary to prevent erosion and sediment transport.
- E. Surface water shall be pumped to maintain excavations free of water. Comply with applicable requirements of the Connecticut Department of Environmental Protection, specifically those requirements related to the management of stormwater and dewatering wastewaters associated with construction activities.
- F. Hay bales and/or silt fences.
  - 1. Remove accumulated sediment once it builds up to one-half of the height of the bale or fabric.
  - 2. Replace damaged or degraded bales as necessary or when directed by the Engineer.
  - 3. Replace damaged fabric, or patch with a 2-ft minimum overlap. Overlaps may only be made at fence posts.
  - 4. Make other repairs as necessary to ensure that the bales/fence is filtering all runoff.
- G. Erosion Control Mats shall be inspected at least once a week. Areas where the mat has become dislodged from the soil surface or become torn shall be re-graded and re-seeded as necessary and the mat re-installed. When repetitive failures occur at the same location review conditions and modify erosion control measures to reduce failure rate. Temporary erosion control blanket damaged during the progress of work or resulting from the Contractor's vehicles, equipment, or operations shall be repaired or replaced at the expense of the Contractor.
- H. Clean catch basin inlet sediment control devices in accordance with manufacturer's guidelines.
- I. Any catch basins that collect sediment as a result of Contractor's work shall be thoroughly cleaned out by Contractor.

END OF SECTION 01 57 13

## SECTION 01 57 14 - TEMPORARY DUST CONTROL

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Furnishing and spreading water, calcium chloride, and/or mulch on the subgrade, or in other areas of a Project Site or associated off-site areas, for the purpose of controlling dust emissions.
- B. The requirements set forth in this section of the specifications apply to all phases and areas of construction.
- C. Contractor is responsible for all health and safety.

#### 1.2 REFERENCES

- A. Reference herein to any technical society, organization, group or regulation are made in accordance with the following abbreviations and, unless otherwise noted or specified, all work under this Section shall conform to the latest edition as applicable.
- B. Regulations of Connecticut State Agencies (RCSA)
  - 1. RCSA Section 22a-174-1 through 43, Abatement of Air Pollution.
- C. American Society for Testing and Materials (ASTM)
  - 1. ASTM D98, Standard Specification for Calcium Chloride.

### PART 2 PRODUCTS

#### 2.1 MATERIALS

- A. Water used shall be clean, non-polluted water obtained from sources approved by Owner's Representative.
- B. Mulch
  - 1. Straw mulch: Threshold straw of oats, wheat, barely, or rye that is free from noxious weeds, mold or other objectionable material. Straw mulch shall contain at least 50 percent by weight of material to be 10-in or longer.
  - 2. Wood chips: Processed tree trimmings free of trash or other physical contaminants such as metal and plastic.

### PART 3 EXECUTION

#### 3.1 GENERAL

- A. Dust control shall be the responsibility of Contractor and dust control operations shall meet the requirements of the State of Connecticut Department of Environmental Protection.

- B. Construction sequencing shall be organized and conducted in a manner to leave existing pavement or ground coverings in place until just prior to earth excavation for the purpose of minimizing the migration of dust beyond the Project Limits into the surrounding area.
- C. Engineer reserves the right to conduct active dust monitoring using visual methods and may utilize particulate measurement equipment during the course of the work. If the amount of fugitive dust and/or particulate generated during the work is deemed unacceptable in the Engineer's judgment or exceeds baseline Project Site conditions at Engineer's monitoring locations, Engineer may require Contractor to stop work and implement corrective measures. No claim for delay will be considered for work stoppage based upon the results of Engineer's active dust monitoring results.
- D. Stockpiled materials from which particle have the potential of becoming airborne shall be securely covered with a temporary waterproof covering made of polyethylene, polypropylene, hypalon, or approved equal. The covers must be in place at all times when work with the stockpiles is not occurring.
- E. Subcontractor shall sweep all adjacent roads and neighboring parking lots and driveways that are impacted by the work. Whenever dirt is tracked from the site it shall be cleaned as necessary to prevent it from becoming a nuisance or hazard. At a minimum, adjacent streets shall be swept once per week.

### 3.2 WATER

- A. The application of water shall be under the control of Engineer at all times. It shall be applied only at the locations, and at such times, and in the amount as may be directed by Engineer. Quantities of water wasted or applied without authorization will not be paid for.
- B. Use of water will not be permitted when it will result in, or create, hazardous or objectionable conditions such as ice, flooding or pollution.
- C. Contractor shall have available and maintain in an operable condition at all times, sufficient equipment for the purpose of applying water for dust control.
- D. Watering equipment shall consist of pipelines, tanks, tank trucks, distributors, pumps, meters, hose or other devices, approved by Engineer, which are capable of applying a uniform spread of water over the surface. A suitable device for a positive shut-off and for regulating the flow of water shall be located so as to permit positive operator control.
- E. Applications of water for dust suppression include, but are not necessarily limited to, the following:
  - 1. Demolition activities, material handling, material processing, and loading.
  - 2. Earthwork.
  - 3. Open excavation faces and dust-prone areas of the work.
  - 4. Temporary access roads and roadway surfaces within and around the Project Site.

### 3.3 MULCH FOR DUST CONTROL

- A. Coordinate the use of mulch for dust control with erosion and sedimentation control measures.



- B. Straw mulch shall be applied at a rate of 100 pounds per 1,000 square feet (100 lb/1,000 ft<sup>2</sup>).
- C. Wood chips or wood mulch shall be applied at such a rate as to form a layer one (1) inch thick.

#### 3.4 OTHER DUST CONTROL MEASURES

- A. A temporary seed mixture may be spread in lieu of, or in addition to mulch over areas where the suspension of grading work in disturbed areas is expected to be more than 30 calendar days and as directed by Engineer.

END OF SECTION 01 57 14

## SECTION 01 57 19 - TEMPORARY ENVIRONMENTAL CONTROLS

### PART 1 - GENERAL

#### 1.1 DESCRIPTION

- A. This section specifies the control of environmental pollution and damage that the Contractor must consider for air, water, and land resources. It includes management of visual aesthetics, noise, solid waste, radiant energy, and radioactive materials, as well as other pollutants and resources encountered or generated by the Contractor. The Contractor is obligated to consider specified control measures with the costs included within the various contract items of work.
- B. Environmental pollution and damage is defined as the presence of chemical, physical, or biological elements or agents which:
  - 1. Adversely effect human health or welfare,
  - 2. Unfavorably alter ecological balances of importance to human life,
  - 3. Effect other species of importance to humankind, or;
  - 4. Degrade the utility of the environment for aesthetic, cultural, and historical purposes.
- C. Definitions of Pollutants:
  - 1. Chemical Waste: Petroleum products, bituminous materials, salts, acids, alkalis, herbicides, pesticides, organic chemicals, and inorganic wastes.
  - 2. Debris: Combustible and noncombustible wastes, such as leaves, tree trimmings, ashes, and waste materials resulting from construction or maintenance and repair work.
  - 3. Sediment: Soil and other debris that has been eroded and transported by runoff water.
  - 4. Solid Waste: Rubbish, debris, garbage, and other discarded solid materials resulting from industrial, commercial, and agricultural operations and from community activities.
  - 5. Surface Discharge: The term "Surface Discharge" implies that the water is discharged with possible sheeting action and subsequent soil erosion may occur. Waters that are surface discharged may terminate in drainage ditches, storm sewers, creeks, and/or "water of the United States" and would require a permit to discharge water from the governing agency.
  - 6. Rubbish: Combustible and noncombustible wastes such as paper, boxes, glass and crockery, metal and lumber scrap, tin cans, and bones.
  - 7. Sanitary Wastes:
    - a. Sewage: Domestic sanitary sewage and human and animal waste.
    - b. Garbage: Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.

#### 1.2 QUALITY CONTROL

- A. Establish and maintain quality control for the environmental protection of all items set forth herein.
- B. Record on daily reports any problems in complying with laws, regulations, and ordinances. Note any corrective action taken.

### 1.3 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.
- B. U.S. National Archives and Records Administration (NARA): 33 CFR 328 Definitions

### 1.4 SUBMITTALS

- A. In accordance with Section, 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES, furnish the following:
  - 1. Environmental Protection Plan: After the contract is awarded and prior to the commencement of the work, the Contractor shall meet with the Resident Engineer to discuss the proposed Environmental Protection Plan and to develop mutual understanding relative to details of environmental protection. Not more than 20 days after the meeting, the Contractor shall prepare and submit to the Resident Engineer // and the Contracting Officer // for approval, a written and/or graphic Environmental Protection Plan including, but not limited to, the following:
    - a. Name(s) of person(s) within the Contractor's organization who is (are) responsible for ensuring adherence to the Environmental Protection Plan.
    - b. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site.
    - c. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel.
    - d. Description of the Contractor's environmental protection personnel training program.
    - e. A list of Federal, State, and local laws, regulations, and permits concerning environmental protection, pollution control, noise control and abatement that are applicable to the Contractor's proposed operations and the requirements imposed by those laws, regulations, and permits.
    - f. Methods for protection of features to be preserved within authorized work areas including trees, shrubs, vines, grasses, ground cover, landscape features, air and water quality, fish and wildlife, soil, historical, and archeological and cultural resources.
    - g. Procedures to provide the environmental protection that comply with the applicable laws and regulations. Describe the procedures to correct pollution of the environment due to accident, natural causes, or failure to follow the procedures as described in the Environmental Protection Plan.
    - h. Permits, licenses, and the location of the solid waste disposal area.
    - i. Drawings showing locations of any proposed temporary excavations or embankments for haul roads, // stream crossings, // material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials. Include as part of an Erosion Control Plan approved by the District Office of the U.S. Soil Conservation Service and the Department of Veterans Affairs.
    - j. Environmental Monitoring Plans for the job site including land, water, air, and noise.
    - k. Work Area Plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas. This plan may be incorporated within the Erosion Control Plan.

- B. Approval of the Contractor's Environmental Protection Plan will not relieve the Contractor of responsibility for adequate and continued control of pollutants and other environmental protection measures.

#### 1.5 PROTECTION OF ENVIRONMENTAL RESOURCES

- A. Protect environmental resources within the project boundaries and those affected outside the limits of permanent work during the entire period of this contract. Confine activities to areas defined by the specifications and drawings.
- B. Protection of Land Resources: Prior to construction, identify all land resources to be preserved within the work area. Do not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, top soil, and land forms without permission from the Resident Engineer. Do not fasten or attach ropes, cables, or guys to trees for anchorage unless specifically authorized, or where special emergency use is permitted.
  - 1. Work Area Limits: Prior to any construction, mark the areas that require work to be performed under this contract. Mark or fence isolated areas within the general work area that are to be saved and protected. Protect monuments, works of art, and markers before construction operations begin. Convey to all personnel the purpose of marking and protecting all necessary objects.
  - 2. Protection of Landscape: Protect trees, shrubs, vines, grasses, land forms, and other landscape features shown on the drawings to be preserved by marking, fencing, or using any other approved techniques.
    - a. Box and protect from damage existing trees and shrubs to remain on the construction site.
    - b. Immediately repair all damage to existing trees and shrubs by trimming, cleaning, and painting with antiseptic tree paint.
    - c. Do not store building materials or perform construction activities closer to existing trees or shrubs than the farthest extension of their limbs.
  - 3. Reduction of Exposure of Unprotected Erodible Soils: Plan and conduct earthwork to minimize the duration of exposure of unprotected soils. Clear areas in reasonably sized increments only as needed to use. Form earthwork to final grade as shown. Immediately protect side slopes and back slopes upon completion of rough grading.
  - 4. Temporary Protection of Disturbed Areas: Construct diversion ditches, benches, and berms to retard and divert runoff from the construction site to protected drainage areas approved under paragraph 208 of the Clean Water Act.
    - a. Sediment Basins: Trap sediment from construction areas in temporary or permanent sediment basins that accommodate the runoff of a local //\_\_\_\_// (design year) storm. After each storm, pump the basins dry and remove the accumulated sediment. Control overflow/drainage with paved weirs or by vertical overflow pipes, draining from the surface.
    - b. Reuse or conserve the collected topsoil sediment as directed by the Resident Engineer. Topsoil use and requirements are specified in Section 31 20 00, EARTH MOVING.
    - c. Institute effluent quality monitoring programs as required by Federal, State, and local environmental agencies.
  - 5. Erosion and Sedimentation Control Devices: The erosion and sediment controls selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's activities. Construct or install all temporary and permanent erosion and sedimentation control features // shown. // on the Environmental

- Protection Plan. // Maintain temporary erosion and sediment control measures such as berms, dikes, drains, sedimentation basins, grassing, and mulching, until permanent drainage and erosion control facilities are completed and operative.
6. Manage borrow areas on // and off // Government property to minimize erosion and to prevent sediment from entering nearby water courses or lakes.
  7. Manage and control spoil areas on // and off // Government property to limit spoil to areas // shown // on the Environmental Protection Plan // and prevent erosion of soil or sediment from entering nearby water courses or lakes.
  8. Protect adjacent areas from despoilment by temporary excavations and embankments.
  9. Handle and dispose of solid wastes in such a manner that will prevent contamination of the environment. Place solid wastes (excluding clearing debris) in containers that are emptied on a regular schedule. Transport all solid waste off Government property and dispose of waste in compliance with Federal, State, and local requirements.
  10. Store chemical waste away from the work areas in corrosion resistant containers and dispose of waste in accordance with Federal, State, and local regulations.
  11. Handle discarded materials other than those included in the solid waste category as directed by the Resident Engineer.
- C. Protection of Water Resources: Keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters and sewer systems. Implement management techniques to control water pollution by the listed construction activities that are included in this contract.
1. Washing and Curing Water: Do not allow wastewater directly derived from construction activities to enter water areas. Collect and place wastewater in retention ponds allowing the suspended material to settle, the pollutants to separate, or the water to evaporate.
  2. Control movement of materials and equipment at stream crossings during construction to prevent violation of water pollution control standards of the Federal, State, or local government.
  3. Monitor water areas affected by construction.
- D. Protection of Fish and Wildlife Resources: Keep construction activities under surveillance, management, and control to minimize interference with, disturbance of, or damage to fish and wildlife. Prior to beginning construction operations, list species that require specific attention along with measures for their protection.
- E. Protection of Air Resources: Keep construction activities under surveillance, management, and control to minimize pollution of air resources. Burning is not permitted on the job site. Keep activities, equipment, processes, and work operated or performed, in strict accordance with the State of // insert Name of State and title of State Air Pollution Statute, Rule, or Regulation // and Federal emission and performance laws and standards. Maintain ambient air quality standards set by the Environmental Protection Agency, for those construction operations and activities specified.
1. Particulates: Control dust particles, aerosols, and gaseous by-products from all construction activities, processing, and preparation of materials (such as from asphaltic batch plants) at all times, including weekends, holidays, and hours when work is not in progress.
  2. Particulates Control: Maintain all excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and all other work areas within or outside the project boundaries free from particulates which would cause a hazard or a nuisance. Sprinklering, chemical treatment of an approved type, light

- bituminous treatment, baghouse, scrubbers, electrostatic precipitators, or other methods are permitted to control particulates in the work area.
3. Hydrocarbons and Carbon Monoxide: Control monoxide emissions from equipment to Federal and State allowable limits.
  4. Odors: Control odors of construction activities and prevent obnoxious odors from occurring.
- F. Reduction of Noise: Minimize noise using every action possible. Perform noise-producing work in less sensitive hours of the day or week as directed by the Resident Engineer. Maintain noise-produced work at or below the decibel levels and within the time periods specified.
1. Perform construction activities involving repetitive, high-level impact noise only between 8:00 //\_\_\_//a.m. and 6:00//\_\_\_//p.m unless otherwise permitted by local ordinance or the Resident Engineer. Repetitive impact noise on the property shall not exceed the following dB limitations:

Time Duration of Impact Noise	Sound Level in dB
More than 12 minutes in any hour	70
Less than 30 seconds of any hour	85
Less than three minutes of any hour	80
Less than 12 minutes of any hour	75

2. Provide sound-deadening devices on equipment and take noise abatement measures that are necessary to comply with the requirements of this contract, consisting of, but not limited to, the following:
  - a. Maintain maximum permissible construction equipment noise levels at 15 m (50 feet) (dBA):

EARTHMOVING		MATERIALS HANDLING	
FRONT LOADERS	75	CONCRETE MIXERS	75
BACKHOES	75	CONCRETE PUMPS	75
DOZERS	75	CRANES	75
TRACTORS	75	DERRICKS IMPACT	75
SCAPERS	80	PILE DRIVERS	95
GRADERS	75	JACK HAMMERS	75
TRUCKS	75	ROCK DRILLS	80
PAVERS, STATIONARY	80	PNEUMATIC TOOLS	80
PUMPS	75	BLASTING	//--//
GENERATORS	75	SAWS	75
COMPRESSORS	75	VIBRATORS	75

- b. Use shields or other physical barriers to restrict noise transmission.

- c. Provide soundproof housings or enclosures for noise-producing machinery.
  - d. Use efficient silencers on equipment air intakes.
  - e. Use efficient intake and exhaust mufflers on internal combustion engines that are maintained so equipment performs below noise levels specified.
  - f. Line hoppers and storage bins with sound deadening material.
  - g. Conduct truck loading, unloading, and hauling operations so that noise is kept to a minimum.
3. 3. Measure sound level for noise exposure due to the construction at least once every five successive working days while work is being performed above 55 // \_\_\_\_ // dB(A) noise level. Measure noise exposure at the property line or 15 m (50 feet) from the noise source, whichever is greater. Measure the sound levels on the A weighing network of a General Purpose sound level meter at slow response. To minimize the effect of reflective sound waves at buildings, take measurements at 900 to 1800 mm (three to six feet) in front of any building face. Submit the recorded information to the Resident Engineer noting any problems and the alternatives for mitigating actions.
- G. Restoration of Damaged Property: If any direct or indirect damage is done to public or private property resulting from any act, omission, neglect, or misconduct, the Contractor shall restore the damaged property to a condition equal to that existing before the damage at no additional cost to the Government. Repair, rebuild, or restore property as directed or make good such damage in an acceptable manner.
- H. Final Clean-up: On completion of project and after removal of all debris, rubbish, and temporary construction, Contractor shall leave the construction area in a clean condition satisfactory to the Resident Engineer. Cleaning shall include off the station disposal of all items and materials not required to be salvaged, as well as all debris and rubbish resulting from demolition and new work operations.

END OF SECTION 01 57 19

## SECTION 01 58 13 PROJECT IDENTIFICATION AND SIGNAGE

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. On-site Project identification and temporary informational sign including:
  - 1. Procurement of printed sign panel by Contractor. Graphics for project signs shall be provided by the University.
  - 2. Contractor to install printed sign panel at a location designated by the University.

#### 1.3 SUBMITTALS

- A. Material certificates or other data indicating compliance with these Specifications for finish type, color, size, style, posts, fittings, hardware, and accessories.
- B. Shop Drawings: In compliance with directions from University's Representative, prepare and submit site plan locating temporary project identification and informational signs required by University.

### PART 2 - PRODUCTS

#### 2.1 CONSTRUCTION SAFETY SIGNS

- A. Construction Safety Signs: Provide Construction Safety Signs as required around the Project Site to provide warning of potential dangers or hazards associated with construction activities. Conform with 29 CFR 1926 and other State, local, or University requirements.
- B. Construction Safety Signs shall include the following:
  - 1. Danger Signs: Danger signs shall be used only where an immediate hazard exists.
    - a. Danger signs shall have red as the predominating color for the upper panel; black outline on the borders; and a white lower panel for additional sign wording (see accompanying figure).
  - 2. Caution Signs: Caution signs shall be used only to warn against potential hazards or to caution against unsafe practices.
    - a. Caution signs shall have yellow as the predominating color; black upper panel and borders; yellow lettering of "caution" on the black panel; and the lower yellow panel for additional sign wording. Black lettering shall be used for additional wording.



- b. Standard color of the background shall be yellow; and the panel, black with yellow letters. Any letters used against the yellow background shall be black. The colors shall be those of opaque glossy samples as specified in Table 1 of American National Standard ANSI Z53.1-1967.
3. Exit Signs: Exit signs, when required, shall be lettered in legible red letters, not less than 6 inches high, on a white field and the principal stroke of the letters shall be at least three-fourths inch in width.
4. Safety Instruction Signs: Safety instruction signs, when used, shall be white with green upper panel with white letters to convey the principal message. Any additional wording on the sign shall be black letters on the white background.
5. Directional Signs: Directional signs, other than automotive traffic signs specified in "Traffic Signs" below, shall be white with a black panel and a white directional symbol. Any additional wording on the sign shall be black letters on the white background. Where applicable, directional signs shall conform to
6. Traffic Signs: Construction areas shall be posted with legible traffic signs at points of hazard. All traffic control signs or devices used for protection of construction workers shall conform to American National Standards Institute ANSI D6.1-1971, *Manual on Uniform Traffic Control Devices for Streets and Highways*.

### PART 3 - EXECUTION

#### 3.1 SIGNS MAINTENANCE

- A. Signs Maintenance: Maintain signs and supports in a neat, clean condition. Repair all damage and weathering to structure, framing and signage.
- B. Sign Relocation: Relocate signs as required by progress of the Work.

#### 3.2 REMOVAL

- A. Other Sign Removal: Remove all address signs, informational signs, construction safety signs, framing, supports and foundations prior to Contract Completion review. Coordinate removal with requirements specified in Division 01 Section "Construction Facilities and Temporary Controls."

END OF SECTION 01 58 13

## SECTION 01 60 00 - PRODUCT REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
  - 1. Division 01 Section "Allowances" for products selected under an allowance.
  - 2. Division 01 Section "Substitution Procedures" for requests for substitutions.

#### 1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
  - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

#### 1.4 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
  2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
    - a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
    - b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

#### 1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
  2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

#### 1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
  3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

## 1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. See Divisions 02 through 33 Sections for specific content requirements and particular requirements for submitting special warranties.

- C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

## PART 2 - PRODUCTS

### 2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
  2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
  3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
  4. Where products are accompanied by the term "as selected," Architect will make selection.
  5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
  6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations and not by previous Project experience. Procedures governing product selection include the following:
1. Proprietary Specification Requirements: Where Specifications name only a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
  2. Semiproprietary Specification Requirements: Where Specifications name three or more products or manufacturers, provide one of the products indicated. Comparable products or substitutions for Contractor's convenience will not be considered.
    - a. Where products or manufacturers are specified by name, accompanied by the term "or equal," or "or approved equal" comply with the provisions concerning "substitutions" to obtain approval for use of an unnamed product.
  3. Non-Proprietary Specifications: When the Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with provisions concerning "substitutions" to obtain approval for use of an unnamed product.
  4. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
  5. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.
    - a. Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.

6. **Basis-of-Design Product:** Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
7. **Visual Matching Specification:** Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
  - a. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Division 01 Section "Substitution Procedures" for proposal of product.
8. **Visual Selection Specification:** Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.
9. **Allowances:** Refer to individual Specification Sections and provisions in Section 01-2100, Allowances, for allowances that control product selection, and for procedures required for processing such selections.

## 2.2 COMPARABLE PRODUCTS

- A. **Conditions for Consideration:** Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
  1. Evidence that the proposed product does not require revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
  2. Proposed changes are in keeping with the intent of Contract Documents.
  3. The request is timely, fully documented and properly submitted.
  4. The request is directly related to an "or equal" clause or similar language in the Contract Documents.
  5. The specified product or method of construction cannot be provided within the Contract Time.
    - a. The request will not be considered if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
  6. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
  7. A substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deduction offsetting responsibilities the Owner may be required to bear.

- a. Additional responsibilities for the Owner may include additional compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner or separate Contractors, and similar considerations.
  8. The specified product or method of construction cannot be provided in a manner that is compatible with other material, and where the Contractor certifies that the substitution will overcome the incompatibility.
  9. The specified product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.
  10. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provide the required warranty.
  11. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  12. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
  13. Samples, if requested.
- B. The Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION OF PRODUCTS:

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other work.
  1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 01 60 00

SECTION 01 61 00 – UNIVERSITY PRODUCT STANDARD

A. Asbestos Certification

Contractor shall certify that all material/equipment installed in any portion of the Work shall be asbestos free. The owner may perform sampling to verify all suspect material/equipment is asbestos free. If any material/equipment is found to contain asbestos, the Contractor shall pay for the lawful and proper removal and disposal of product(s), and re-install acceptable material/equipment all at its sole expense.

B. For purposes of this requirement, materials include, **but are not limited to** the following:

2.1 Surfacing Treatments

Fireproofing Acoustical Plaster  
Finish Plasters, Skim Coats of Joint Compound, Fibrous Type Paint Applications, Sprayed-on applications

2.2 Thermal System Insulation

Equipment Insulation, Gaskets, Valve Packings,  
Boiler, Breeching, Boiler Rope, Duct or Tank Insulation,  
Cement or Mortar used for boilers and refractory brick.  
Piping and Fitting Insulations including but not limited to Wrapped Paper, Millboard, Rope, Cork, Preformed Plaster, Job Molded Plaster and Coverings over Fibrous Glass Insulation.

2.3 Roofing and Siding Materials

Insulation Board, Vapor Barriers, Felts, Coatings & Adhesives,  
Flashing, Shingles, Cementitious Board (Transite),  
Galbestos, Non-Metallic or Non-Wood Roof Decking

2.4 Other Miscellaneous Materials

Cove Base, Floor Leveling Compound,  
Ceiling & Floor Tiles, Vibration Isolators, Laboratory Tables and Hoods,  
Mastics, Adhesives, Coatings & Caulks,  
Wallboard & Joint Compounds,  
Friction Products, Gaskets,  
Fire Door Materials, Cementitious Products (Transite)

The Contractor certifies that all material/equipment installed in any portion of the Work shall be asbestos free:

Contractor Signature:  Date:   
Print Name:   
Company:

Please keep a completed copy of this document in the department's project files and mail or fax a copy to:  
University of Connecticut, Department of Environmental Health and Safety, Unit 4097, 486-1106 (FAX)



END OF SECTION 01 61 00

## SECTION 01 71 23 – FIELD ENGINEERING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. General: This Section specifies administrative and procedural requirements for field-engineering services, including, but not necessarily limited to, the following:
  - 1. Land survey work.
  - 2. Civil engineering services.
  - 3. Locating Underground Utilities

#### 1.3 SUBMITTALS

- A. Certificates: Submit a certificate signed by the Land Surveyor or Professional Engineer certifying that the location and elevation of improvements comply with the Contract Documents.
- B. Project Record Documents: Submit a record of Work performed and record survey data as required under provisions of Sections "Submittals" and "Project Closeout".

#### 1.4 QUALITY ASSURANCE

- A. Surveyor: Engage a Connecticut-Licensed Land Surveyor to perform land-surveying services required, including, but not limited to, layout and final survey.
- B. Engineer: Engage a Connecticut-Licensed Professional Engineer of the discipline required, to perform required engineering services.

### PART 2 - PRODUCTS (Not Applicable)

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. The Owner will identify existing control points. Refer to the "Existing Conditions Plan".
- B. Verify layout information shown on the Drawings, in relation to the property survey and existing benchmarks before proceeding to layout the Work. Locate and protect existing benchmarks and control points. Preserve permanent reference points during construction.

1. Do not change or relocate benchmarks or control points without prior written approval. Promptly report lost or destroyed reference points, or requirements to relocate reference points because of necessary changes in grades or locations.
  2. Promptly replace lost or destroyed project control points. Base replacements on the original survey control points.
- C. Establish and maintain a minimum of two permanent benchmarks on the site, referenced to data established by survey control points.
1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
- D. Existing utilities and equipment: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction.
1. Prior to construction, verify the location and invert elevation at points of connection of storm sewer.
  2. Utility Locator Service: Employ an underground utility locator to identify and mark locations of underground utilities within project area. In addition, notify local utility companies and Call Before You Dig prior to commencement of work.
    - a. Engaging the underground utility locator does not supersede or replace the requirement to contact Call Before You Dig.
  3. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Engineer and then only after arranging to provide temporary utility services according to requirements indicated:
    - a. Notify Engineer not less than two days in advance of proposed utility interruptions.
    - b. Do not proceed with utility interruptions without Engineer's written permission.
    - c. Contact "Call Before You Dig" at 1-800-922-4455 before excavating. Proceed with excavation only after utility locator service completes marking of utility locations.

### 3.2 PERFORMANCE

- A. Working from lines and levels established by the property survey, establish benchmarks and markers to set lines and levels at each story of construction and elsewhere as needed to properly locate each element of the Project. Calculate and measure required dimensions within indicated or recognized tolerances. Do not scale Drawings to determine dimensions.

1. Advise entities engaged in construction activities, of marked lines and levels provided for their use.
  2. As construction proceeds, check every major element for line, level and plumb.
- B. Surveyor's Log: Maintain a surveyor's log of control and other survey Work. Make this log available for reference.
1. Record deviations from required lines and levels, and advise the Architect when deviations that exceed indicated or recognized tolerances are detected. On Project Record Drawings, record deviations that are accepted and not corrected.
  2. On completion of foundation walls, major site improvements, and other Work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles and elevations of construction and sitework.
- C. Site Improvements: Locate and lay out site improvements, including pavements and invert elevations by instrumentation and similar appropriate means.
- D. Existing Utilities: Furnish information necessary to adjust, move or relocate existing structures, utility poles, lines, services or other appurtenances located in, or affected by construction. Coordinate with local authorities having jurisdiction.

### 3.3 FINAL SURVEY

- A. Provide the University a Final Survey depicting the As-Built configuration of all above-grade and below-grade Work. Such Final Survey shall be provided in hard copy prints and Autodesk AutoCAD drawings (.dwg format) and be sealed by a Connecticut-Licensed Land Surveyor.
- B. Final Survey shall accurately provide the following information:
1. The installed location of curbing, sidewalks, light poles, signs, walls, structures, and other improvements installed as part of the Work.
  2. The location of all terminated/cut/capped/plugged utilities and service disconnections.
  3. The installed location of all utility and drainage systems.
    - a. Subsurface piping
    - b. Subsurface communications.
    - c. Subsurface electric.
    - d. Subsurface empty "spare" conduits.
    - e. Utility structures, including but not limited to catch basins, manholes, inlets, handholes, and junction boxes.
    - f. Drainage pipe inverts at all structures, rain gardens, and bio-swales.
  4. The As-Built elevation of new roadway surface and sidewalks. Survey shall depict sufficient As-Built elevation data to demonstrate compliance with handicapped accessibility requirements.

END OF SECTION 01 71 23

## SECTION 01 73 00 - EXECUTION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Coordination of Owner-installed products.
6. Progress cleaning.
7. Starting and adjusting.
8. Protection of installed construction.

- B. Related Requirements:

1. Division 01 Section "Summary" for limits on use of Project site.
2. Division 01 Section "Submittal Procedures" for submitting surveys.
3. Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

#### 1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.

- B. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:
1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
  2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
  3. Products: List products to be used for patching and firms or entities that will perform patching work.
  4. Dates: Indicate when cutting and patching will be performed.
  5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
    - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.

#### 1.5 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
  2. 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.
  3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety
  4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- C. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential

interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

- D. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with requirements in Division 01 sustainable design requirements Section.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
  2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.

2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
  3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
1. Description of the Work.
  2. List of detrimental conditions, including substrates.
  3. List of unacceptable installation tolerances.
  4. Recommended corrections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Existing Utility Information: Furnish information to University Representative that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. And coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Division 01 Section "Project Management and Coordination."

### 3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
  2. Establish limits on use of Project site.



3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
  4. Inform installers of lines and levels to which they must comply.
  5. Check the location, level and plumb, of every major element as the Work progresses.
  6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
  7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

### 3.4 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
  2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
  2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
  3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- C. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

### 3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
  - 1. Make vertical work plumb and make horizontal work level.
  - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
  - 2. Allow for building movement, including thermal expansion and contraction.
  - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

### 3.6 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
  - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Division 01 Section "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
  - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  - 4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
  - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  - 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
  2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
    - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    - b. Restore damaged pipe covering to its original condition.
  3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
  4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
  5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

### 3.7 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
  1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
  2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

### 3.8 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
  3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
    - a. Use containers intended for holding waste materials of type to be stored.
  4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
1. Remove liquid spills promptly.
  2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Division 01 Section "Construction Waste Management and Disposal."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.9 STARTING AND ADJUSTING

- A. Coordinate startup and adjusting of equipment and operating components with requirements in Division 01 Section "General Commissioning Requirements."
- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Manufacturer's Field Service: Comply with qualification requirements in Division 01 Section "Quality Requirements."

3.10 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 01 73 00

## SECTION 01 77 00 - CLOSEOUT PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Substantial Completion procedures.
  - 2. Final completion procedures.
  - 3. Warrantee Requirements
  - 4. Submittal of Warranties.
  - 5. Revenue Services Requirements
  - 6. Final cleaning.
  - 7. Repair of the Work.
- B. Related Requirements:
  - 1. Division 01 Section "Photographic Documentation" for submitting final completion construction photographic documentation.
  - 2. Division 01 Section "Execution" for progress cleaning of Project site.
  - 3. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
  - 4. Divisions 02 through 33 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.

- C. Field Report: For pest control inspection.

#### 1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

#### 1.6 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Divisions 02 through 33 Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Divisions 02 through 33 Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by University Representative. Label with manufacturer's name and model number where applicable.

- a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain University Representative signature for receipt of submittals.

5. Submit test/adjust/balance records.
6. Submit sustainable design submittals required in Division 01 sustainable design requirements Section and in individual Division 02 through 33 Sections.
7. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.



2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Complete startup and testing of systems and equipment.
4. Perform preventive maintenance on equipment used prior to Substantial Completion.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings when specified in Division 01 Section "Demonstration and Training."
6. Advise Owner of changeover in heat and other utilities.
7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
9. Complete final cleaning requirements, including touchup painting.
10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

## 1.7 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:

1. Submit a final Application for Payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
2. Submit an updated final Application for Payment statement, accounting for final additional charges to the Contract Sum.
3. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
4. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
5. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion, or when the Owner took possession of and responsibility for corresponding elements of the Work.
6. Submit consent of surety to final payment.
7. Submit a final liquidated damages settlement statement.

- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
  - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
  - 2. Upon completion of reinspection, the University Representative with advice of the Architect will prepare a Certificate of Final Acceptance, or advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
  - 3. If necessary, reinspection will be repeated.

#### 1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
  - 1. Organize list of spaces in sequential order.
  - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
  - 3. Include the following information at the top of each page:
    - a. Project name.
    - b. Date.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Page number.
  - 4. Submit list of incomplete items in the following format or format approved by Owner:
    - a. PDF electronic file. Architect will return annotated file.

#### 1.9 WARRANTY REQUIREMENTS

- A. Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.
- B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective

Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

- D. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.
- E. The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

#### 1.10 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. All work shall be covered by the standard one (1) year guarantee as set forth in the General Conditions. The Contractor shall visit the project site at 11 months into the guarantee period to determine the scope of any required guarantee work. The Contractor shall contact the University Representative prior to this visit so that the University Representative may attend.
- C. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- D. Specific requirements for warranties for the Work and products and installations that are specified to be warranty are included in the individual Sections of Divisions 2 through 33.
- E. Disclaimers and limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.
- F. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
  - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
  - 2. Address to: Executive Director of Architectural and Engineering Services, Office of Architectural and Engineering Services, University of Connecticut Box Unit-3038, Storrs, Connecticut 06269-3038
  - 3. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or

installation, including the name of the product and the name, address, and telephone number of Installer.

4. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name and number, and name of Contractor.
5. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
6. All required guarantees/warranties will be by the respective company made out to the University of Connecticut.
7. All guarantees/warranties supplied by subcontractors or manufacturers shall be countersigned by the General Contractor.

G. Provide additional copies of each warranty to include in operation and maintenance manuals.

#### 1.11 REVENUE SERVICES REQUIREMENTS

- A. Upon receipt of the Certificate of Substantial Completion, the Contractor shall submit the following information required by the Connecticut Department of Revenue Services.
  1. The identity and addresses of all subcontractors performing work on the project.
  2. The Connecticut tax registration numbers of the General Contractors and all subcontractors.
  3. The Federal Social Security account numbers, or Federal Employer Identification numbers, or both, if applicable, for the General Contractor and all subcontractors.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
  1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

### PART 3 - EXECUTION

#### 3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
  - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
    - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    - b. Clean catch basins affected by construction activities.
    - c. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    - d. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    - e. Remove tools, construction equipment, machinery, and surplus material from Project site.
    - f. Remove snow and ice to provide safe access to building.
    - g. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    - h. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
    - i. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
    - j. Remove labels that are not permanent.
    - k. Clean and polish tile and other glazed surfaces affected by construction activity.
    - l. Clean and polish finish hardware affected by construction activity.
    - m. Clean exposed surfaces of diffusers, registers, and grills affected by construction activity.
    - n. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency that were affected by construction activity.
    - o. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in Division 01 Section "Temporary Facilities and Controls." Prepare written report.
- D. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.

- E. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.
  - 1. Where extra materials of value remaining after completion of associated Work have become the Owner's property, arrange for disposition of these materials as directed.

### 3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
  - 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
  - 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
    - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
  - 3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
  - 4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

### 3.3 CERTIFICATIONS

- A. The Contractor, at complete of construction, shall provide to the University a "Certificate of Substantial Compliance" bearing original signatures of an officer of the company stating: "this is to CERTIFY that, in my professional opinion, the complete structure/renovations described above is in substantial compliance with the approved construction documents on file with the University of Connecticut. Minor deviations and special stipulations are noted below (if any)"
- B. Prior to Owners' approval and acceptance, mechanical and electrical systems shall be fully operational.

Student Union Senior Square  
Project #201462

CLOSEOUT PROCEDURES

01 77 00-9

PART 4 - SCHEDULES – NOT USED

END OF SECTION 01 77 00



# PUNCH LIST

Project: \_\_\_\_\_  
\_\_\_\_\_

From (A/E): \_\_\_\_\_

Site Visit Date: \_\_\_\_\_

To (Contractor): \_\_\_\_\_  
\_\_\_\_\_

A/E Project Number: \_\_\_\_\_

Contract For: \_\_\_\_\_

The following items require the attention of the Contractor for completion or correction. This list may not be all-inclusive, and the failure to include any items on this list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

Item Number	Room Number	Location (Area)	Description	Correction/Completion Date	Verification A/E Check
-------------	-------------	-----------------	-------------	----------------------------	------------------------

Attachments

Signed by: \_\_\_\_\_ Date: \_\_\_\_\_

Copies:  Owner  Consultants  \_\_\_\_\_  \_\_\_\_\_  \_\_\_\_\_  \_\_\_\_\_  \_\_\_\_\_  \_\_\_\_\_  \_\_\_\_\_  File



## SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
  - 1. Record Drawings.
  - 2. Record Specifications.
  - 3. Record Product Data.
  - 4. Miscellaneous record submittals.
- B. Related Requirements:
  - 1. Division 01 Section "Closeout Procedures" for general closeout procedures.
  - 2. Divisions 02 through 33 Sections for specific requirements for project record documents of the Work in those Sections.

#### 1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
  - 1. Number of Copies: Submit copies of record Drawings as follows:
    - a. Initial Submittal:
      - 1) Submit one (1) paper-copy set of marked-up record prints.
      - 2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
    - b. Final Submittal:
      - 1) Submit one (1) paper-copy set of marked-up record prints.
      - 2) Print each drawing, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit one paper copy of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit one paper copy of each submittal.

1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.
- D. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit one paper copy of each submittal.
- E. Reports: Submit written report monthly indicating items incorporated into project record documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

## PART 2 - PRODUCTS

### 2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
  1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
    - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Accurately record information in an acceptable drawing technique.
    - c. Record data as soon as possible after obtaining it.
    - d. Record and check the markup before enclosing concealed installations.
    - e. Cross-reference record prints to corresponding archive photographic documentation.
  2. Content: Types of items requiring marking include, but are not limited to, the following:
    - a. Dimensional changes to Drawings.
    - b. Revisions to details shown on Drawings.
    - c. Depths of foundations below first floor.
    - d. Locations and depths of underground utilities.
    - e. Revisions to routing of piping and conduits.
    - f. Revisions to electrical circuitry.
    - g. Actual equipment locations.
    - h. Duct size and routing.
    - i. Locations of concealed internal utilities.
    - j. Changes made by Change Order or Construction Change Directive.
    - k. Changes made following Architect's written orders.
    - l. Details not on the original Contract Drawings.
    - m. Field records for variable and concealed conditions.
    - n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
  4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
  5. Mark important additional information that was either shown schematically or omitted from original Drawings.
  6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
  2. Identification: As follows:
    - a. Project name.
    - b. Date.
    - c. Designation "PROJECT RECORD DRAWINGS."
    - d. Name of Architect and or Construction Manager.
    - e. Name of Contractor.

## 2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
  3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
  4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
  5. Note related Change Orders and record Drawings where applicable.
- B. Format: Submit Record Specifications as paper copy.

## 2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders] and record Drawings where applicable.

B. Format: Submit record Product Data as paper copy.

#### 2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as paper copy.

### PART 3 - EXECUTION

#### 3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's and Owner Representative's reference during normal working hours.

END OF SECTION 01 78 39

## SECTION 02 32 19 - EXPLORATORY EXCAVATIONS

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Section includes:
  - 1. Excavation of exploratory excavations by Contractor where it may be necessary to locate or examine soils, groundwater, drains, pipes, rock, utilities, subsurface structures, or any other obstacles or conditions.
  - 2. Stockpiling, management, and disposal of surplus or unsuitable excavated materials.
  - 3. Backfilling and compacting of exploratory excavations with suitable materials.
- B. Contractor shall coordinate work between all Subcontractors, sections, and trades required for the proper completion of the work.
- C. Contractor is responsible for all health and safety.
- D. Exploratory excavations shall be conducted where shown on the Contract Drawings, where directed or approved by Engineer, and as Contractor may deem necessary to locate or examine subsurface conditions as part of his work.
- E. All exploratory excavation work shall be done in conformance with applicable safety codes and regulations.

#### 1.2 PAYMENT

- A. Exploratory excavation work conducted by Contractor for his use or as specifically called-for on the Drawings or in the Specifications shall be considered incidental work and shall be included in Contractor's base price for the project. Contractor shall be responsible for any required backfilling with suitable materials, disposal of unsuitable excavated materials, and restoration of the excavation area.
- B. Exploratory Excavation requested by Engineer shall be paid for in accordance with Contractor's Unit Price bid for "Exploratory Excavations" per Section 01 2200 – Unit Prices.

#### 1.3 REFERENCES

- A. Reference herein to any technical society, organization, group or regulation are made in accordance with the following abbreviations and, unless otherwise noted or specified, all work under this Section shall conform to the latest edition as applicable.
- B. United States Code of Federal Regulations (CFR).
  - 1. 29 CFR 1926, Safety and Health Regulations for Construction.

#### 1.4 SAFETY REQUIREMENTS

- A. Contractor shall conduct all excavation activities in conformance with applicable regulations, including those relating to excavation safety, sheeting, shoring, and stabilization.
- B. Contractor shall provide and maintain barricades, signs, lights, etc., required for the protection of personnel, materials and property. Temporary barricades, etc. shall conform all applicable codes and regulations, and shall be lighted at night with lanterns, flares and reflectorized paint as required for safety. Adapt barricades, signs, lights, etc. to evolving site conditions throughout the progress of the work.
- C. Provide other safety devices as required, including adaptation of such safety devices to changing site conditions, to prevent unauthorized entry to construction areas and open excavations. Provide warning signs and other temporary construction safety devices necessary for proper completion of the work in compliance with applicable safety regulations.
- D. Any time an excavation is to remain open, at a minimum, provide full enclosure with safety fencing and implement additional safety control measures as appropriate.

#### 1.5 PROTECTION

- A. Existing Utilities
  - 1. Existing utilities remaining in service, including those remaining in service until after relocation, and relocated utilities shall be protected from damage. Before excavating near any existing utilities, notify the utility owner, coordinate protective work and comply with the utility owners' requirements. Safeguard and protect from damage or movement any existing services, utilities and utility structures uncovered or encountered which are to remain in service.
  - 2. Where known utilities are encountered, notify Engineer and document location and type of utility before proceeding with work in such area.
  - 3. When uncharted or incorrectly charted piping or utilities are encountered during excavation, stop work and notify Engineer immediately. Cooperate with the utility owners in maintaining their utilities in operation prior to resuming work.
- B. Retaining Structures: Provide bracing, shoring, sheeting, sheet piling, underpinning or other retaining structures necessary to guard against any movement or settlement of existing or new construction, utilities, paving, light standards, piping or conduit. Assume responsibility for the strength and adequacy of retaining structures, and for the safety and support of construction, utilities or paving, and for any movement, settlement or damage thereto.
- C. Existing sidewalks to remain shall not be used for access to test pits. If necessary the contractor is responsible for protecting as well as any and all damage that is incurred.
- D. Existing Turf areas to remain shall not be used for access to test pits. If necessary the contractor is responsible for protecting as well as for any and all damage that is incurred.

#### 1.6 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and methods required for proper performance of the work in this Section. Use equipment of adequate size, capacity and quantity to accomplish the work of this Section in a timely manner.

### 1.7 SEQUENCING

- A. Unless otherwise specified, Contractor shall dig test pits where indicated on the Drawings, and Contractor shall notify Engineer of the results at least fourteen (14) days prior to the start of any underground installations within said test pit area. Contractor shall notify Engineer and/or utility companies of any conflicts uncovered which may require design revisions, relocations and/or adjustment. No work shall be started within these areas of conflict until so authorized by Engineer.

### 1.8 UTILITY COORDINATION

- A. Contractor shall coordinate exploratory excavations with the respective utility owners having facilities in the vicinity of the test pit location.
- B. If so desired by the respective utility owners, all or part of the work under this Section may be accomplished by their crews and/or supervised by them.
- C. All utilities shall have been informed of the necessity of the work under this Item and Contractor shall give sufficient notice to the respective utility owners to afford reasonable time for coordination.

## PART 2 PRODUCTS - NOT USED

## PART 3 EXECUTION

### 3.1 EXCAVATION

- A. Exploratory excavation work, including backfilling, shall comply with applicable provisions of earthwork and excavation as indicated in other Sections and shall have neat, clean cut and vertical sides.
- B. Contractor shall provide Engineer a minimum two (2) day notice prior to test pit excavation. Notify the Engineer prior to backfill.
- C. Contractor shall protect existing structures with university approved protection matting.
- D. Contractor shall measure and record the size, configuration, exact horizontal and vertical location of all utilities, pipes or other obstacles uncovered in the various test pits dug under this Section.
- E. Excavation of exploratory excavations shall be accomplished by such means as are required to ensure that underground utilities or structures which may be encountered are not damaged. Contractor shall be solely responsible for any damages incurred during excavation operations. Any such damages shall be repaired or replaced by Contractor to the satisfaction of the facility owner/operator, responsible/administering agency, and/or Engineer.
  - 1. Whether repair and/or replacement is Conducted by Contractor or must be conducted by owner/operator or responsible/administering agency, any and all costs thereof, including those costs associated with planning, coordination and owner/operator or responsible/administering agency personnel, shall be borne by Contractor.
- F. Where an existing pavement has been removed for exploratory excavations, the surface shall be restored in accordance with the Drawings and applicable provisions of pavement installation as indicated in other Sections. In all other areas, the surface of test pit areas shall

be backfilled and the surface restored to a condition equal to original, unless otherwise indicated by Engineer.

- G. The contractor shall remove all utility mark outs after work is completed.

END OF SECTION 02 32 19



## SECTION 02 41 23 - SITE DEMOLIITON

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Section includes:
  - 1. General Site Demolition.
  - 2. Demolition of structures, retaining walls, signage, light standards, foundations and appurtenances, pavement, curbing, and similar site improvements.
  - 3. Filling of voids and excavations resulting from demolition.
- B. Contractor shall coordinate work between all Contractors, sections, and trades required for the proper completion of the work.
- C. Contractor is responsible for all health and safety.

#### 1.2 REFERENCES

- A. Reference herein to any technical society, organization, group or regulation are made in accordance with the following abbreviations and, unless otherwise noted or specified, all work under this Section shall conform to the latest edition as applicable.
- B. Code of Federal Regulations (CFR).
  - 1. 29 CFR 1926, Safety and Health Regulations for Construction.
- C. State of Connecticut.
  - 1. State of Connecticut Solid Waste Management Regulations, Sections 22a-209 including any amendments thereto.

#### 1.3 DEFINITIONS

- A. Demolition: Any operation including the dismantling or wrecking of a structure, assembly, appurtenance, or any portion thereof, including major and minor components, parts, and systems. Demolition shall be inclusive of the removal, handing, processing, segregation, loading, and proper off-site disposition of materials. Demolition shall be interpreted as complete and total removal unless otherwise indicated. The terms "Remove" and "R&D" shall be synonymous with "Demolition".
- B. Bulky Waste: Land clearing debris and non-contaminated or hazardous waste material resulting directly from demolition activities other than Clean Fill, including such materials as tree stumps, tree tops, concrete, wood, brick, plaster, roofing materials, wallboard, metals, carpeting, insulation, furniture, and furnishings. Bulky Waste shall include Construction and Demolition Debris and Construction and Demolition Waste.

#### 1.4 SAFETY REQUIREMENTS

- A. Contractor shall conduct all excavation activities in conformance with applicable regulations, including those relating to excavation safety, sheeting, shoring, and stabilization.

- B. Contractor shall provide and maintain barricades, signs, lights, etc., required for the protection of personnel, materials and property. Temporary barricades, etc. shall conform all applicable codes and regulations, and shall be lighted at night with lanterns, flares and reflectorized paint as required for safety. Adapt barricades, signs, lights, etc. to evolving site conditions throughout the progress of the work.
- C. Provide other safety devices as required, including adaptation of such safety devices to changing site conditions, to prevent unauthorized entry to construction areas and open excavations. Provide warning signs and other temporary construction safety devices necessary for proper completion of the work in compliance with applicable safety regulations.
- D. Any time an excavation is to remain open, at a minimum, provide full enclosure with safety fencing and implement additional safety control measures as appropriate.

### 1.5 QUALITY ASSURANCE

- A. 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.

### 1.6 REGULATORY REQUIREMENTS

- A. Comply with all applicable federal, state, and local safety and health requirements regarding all aspects of the work. Do not proceed until all permits or other approvals are secured.
- B. Contractor is bound to comply with any project-related permits or approval obtained by Owner, including all requirements of such permit and representations contained in permit application as though Contractor were the permittee. Requirements and conditions set forth in Owner-obtained project-related permits and permit applications shall be binding on Contractor just as any Specification would be.
- C. Do not close or obstruct roadways, sidewalks or hydrants without the express approval of the University representative.

## PART 2 PRODUCTS – NOT USED

## PART 3 EXECUTION

### 3.1 UTILITIES

- A. Locate and identify existing utilities that are to remain and protect them from damage.
- B. For utility removal or abandonment, refer to Division 02 Section “Utility Demolition and Abandonment.”

### 3.2 SITE DEMOLITION

- A. Site demolition work is shown on the Drawings.
- B. Conduct demolition operations in a manner that will prevent damage to adjacent structures, utilities, pavements and other facilities to remain.

### 3.3 MATERIAL DISPOSITION

- A. All materials resulting from demolition activities shall be removed from the Project Site by Contractor for disposal, reuse, salvage or recycling.

1. The loading of demolition materials for disposal shall be performed in a manner that prevents materials and activities from generating excessive dust and ensure minimum interference with roads, sidewalks and streets both onsite and offsite.
  2. Transport of all materials off-site shall be in accordance with applicable Department of Transportation Regulations. All utility demolition materials leaving the site shall become the property of Contractor.
- B. Disposal of Demolition Materials: Disposal shall be conducted in accordance with all applicable regulations and occur only at facilities approved/licensed or permitted by the Connecticut Department of Energy and Environmental Protection.

### 3.4 DUST CONTROL

- A. Implement fugitive dust suppression to prevent unacceptable levels of dust resulting from site demolition operations or other activities required by the Contract Documents. It shall be the Contractor's responsibility to supervise fugitive dust control measures and to monitor airborne particulate matter. Comply with applicable provisions of Division 01 Section "Temporary Dust Control."

END OF SECTION 02 41 23

SECTION 02 44 00 - CONTROL OF EXISTING FLOWS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes:
  - 1. Maintenance of pipe flows through existing sanitary sewers.
  - 2. Maintenance of flows through existing storm sewers.
- B. Contractor shall coordinate work between all Subcontractors, sections, and trades required for the proper completion of the work.
- C. Contractor is responsible for all health and safety.

1.2 DESCRIPTION OF THE WORK

- A. During the performance of the work, maintain flows through existing sanitary sewers and storm sewers.
- B. Furnish all necessary equipment to handle sewage, seepage, storm pipe, groundwater, surface and flood flows which may be encountered at any time during the work.
- C. The manner of providing for maintenance and management of flows shall meet the approval of Engineer and the entire cost of said work should be included in the unit or lump sum prices bid for the various items of the work to be done under this Contract.
- D. Contractor shall be responsible for any flooding or sanitary backup on his work and to the property owners affected by such flooding or backup.
- E. Contractor shall make such provisions as may be required by the Local, State or Federal Health Officers, or any other public bodies, with jurisdiction over the flow of storm drainage, sanitary sewage and natural flows.

1.3 REFERENCES

- A. Reference herein to any technical society, organization, group or regulation are made in accordance with the following abbreviations and, unless otherwise noted or specified, all work under this Section shall conform to the latest edition as applicable.
- B. Code of Federal Regulations (CFR)
  - 1. 29 CFR 1926, Safety and Health Regulations for Construction.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION 02 44 00

## SECTION 02 61 00 - REMOVAL AND DISPOSAL OF REGULATED SOILS

### PART 1 GENERAL

#### 1.1 SUMMARY

A. Section includes:

1. Excavating, staging, loading, transportation, and final off-site disposal of Regulated Soils, to include:
  - a. Regulated Soils.
  - b. Debris.
  - c. Solid Waste.

- B. Contractor shall coordinate work between all Subcontractors, sections, and trades required for the proper completion of the work, including construction safety.

#### 1.2 PAYMENT

- A. The work of this section will be paid for in accordance with Contractor's Unit Price bid for "Excavation and Disposal of Regulated Soils".

#### 1.3 REFERENCES

- A. Reference herein to any technical society, organization, group or regulation are made in accordance with the following abbreviations and, unless otherwise noted or specified, all work under this Section shall conform to the latest edition as applicable.
- B. United States Code of Federal Regulations (CFR).
1. 29 CFR 1926, Safety and Health Regulations for Construction.
- C. Regulations of Connecticut State Agencies (RCSA)
1. RCSA Section 22a-133k-1 through 3, Remediation Standard.
  2. RCSA Section 22a-209-1 through 16, Solid Waste.
  3. RCSA Section 22a-449(c)-100 through 119, Hazardous Waste.

#### 1.4 DEFINITIONS

- A. Regulated Soil: A material or waste, including solids, debris, miscellaneous waste, or combination thereof affected by the presence of any organic or inorganic chemical substance which is regulated by local, state or federal laws and/or regulations in its handling, treatment, storage, transportation, or disposal. Regulated Soil shall include those materials defined as Solid Waste, Contaminated Soils, Polluted Soils, Regulated Waste, Special Waste, or Hazardous Waste in accordance with applicable state and federal regulations.

#### 1.5 QUALITY ASSURANCE

- A. The handling, disposal, and general management of Regulated Soils shall be conducted to the satisfaction of the University.

- B. The University will provide for any required environmental sampling, including characterization of in-place materials or characterization to support treatment/disposal.
- C. Use adequate numbers of skilled workmen who are trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and methods required for proper performance of the work of this Section.
- D. When Regulated Soils or similar materials are encountered during the course of the work, stop work in the affected area and coordinate with the University representative. Any subsequent handling of Regulated Soils or similar materials shall be conducted in accordance with a University-approved Regulated Soils Management Plan.
- E. Any handling of Regulated Soils or similar materials requires adherence to applicable regulations pertaining to work involving such media. Contractor shall employ all necessary safety and health provisions including but not limited to the use of trained personnel, chemical protective clothing, personnel protective equipment, implementation of engineering controls, air and personnel monitoring, and decontamination activities.
- F. Contractor shall conduct all activities in conformance with applicable regulations, including those relating to health and safety, worker training, waste handling and storage, and waste disposal.
- G. Treatment/Disposal facility: The University reserves the right to refuse any proposed treatment/disposal facility based on such facility's operating permit status or historic record of compliance with applicable waste handling, treatment, and/or disposal regulations.

#### 1.6 SUBMITTALS

- A. Submit the following to the University for approval:
  - 1. The name of the treatment/disposal facilities which Contractor proposes to utilize to receive Regulated Soils from the project.
  - 2. Copies of all treatment/disposal facility licenses and/or permits to operate.
  - 3. Approvals from selected treatment/disposal facility.
  - 4. Copies of any analytical data or related waste characterization data.
  - 5. Copies of all Manifests, Bills of Lading, or other transport documentation.
  - 6. Proof of treatment/disposal from the treatment/disposal in the form of certified disposal ticket, signed Manifest, signed Bill of Lading, or other transport documentation executed by the treatment/disposal facility.

#### PART 2 PRODUCTS - NOT USED

#### PART 3 EXECUTION

##### 3.1 EXCAVATION AND HANDLING

- A. Excavation and other material handling involving Regulated Soils shall be performed in a manner which considers the health and safety of all Contractor personnel and the general public.
- B. Comply at all times with applicable regulations and the policies of the Connecticut Department of Energy and Environmental Protection and the University.

3.2 DISPOSAL COORDINATION AND TRANSPORT

- A. Contractor shall be solely responsible for coordinating treatment/disposal facility approval, obtaining treatment/disposal facility approval, loading, transport, and ultimate disposal of Regulated Soil.
- B. Upon receipt of the final approval from the treatment/disposal facility, the Contractor shall forward a copy of said approval to the University.
- C. Manifests or Bills of Lading, whichever is required, shall be prepared by the Contractor twenty four (24) hours in advance of shipment of Contaminated Materials. Coordinate with the University for required signatures. Provide the University with copies of all Manifests or Bills of Lading.
- D. Contractor shall comply with applicable over-the-road local, State, and Federal ordinances, rules, laws, and Regulations.
- E. Provide the University with proof of treatment/disposal from the treatment/disposal in the form of certified disposal ticket, Manifest, or Bill of Lading.

END OF SECTION 02 61 00

## SECTION 129300 - SITE FURNISHINGS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Seating.
- B. Related Requirements:
  - 1. Section 32 "Cast-in-Place Concrete" for concrete footings.
  - 2. Section 31 "Earth Moving" for excavation for installing concrete footings.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples for Verification: For each type of exposed finish, not less than 6-inch- (152-mm-) long linear components and 4-inch- (102-mm-) square sheet components.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For site furnishings to include in maintenance manuals.

### PART 2 - PRODUCTS

#### 2.1 BENCHES

- A. Bench: 72" backed steel bench. Provide bench free of defects.
  - 1. Basis of Design Product: The design for the bench is based on Landscape Forms. Bench shall have a factory applied finish equal to Landscape Forms, Inc "Pangard II". Subject to compliance with requirements, provide the named product of a comparable product, as approved by the landscape architect.
  - 2. Bench:
    - a. Style: Backed



- 1) Depth: 28 inches
- 2) Overall Height: 34 inches
- 3) Arm Height: 28 inches
- b. Length: 72 inches
- c. Seat Pattern: Horizontal strap for exterior applications, constructed of steel straps 1-1/2" x 0.188"
- d. Mounting: Surface mounted
- e. Color: Black

## 2.2 GENERAL FINISH REQUIREMENTS

- A. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## 2.3 STEEL AND GALVANIZED-STEEL FINISHES

- A. Baked-Enamel, Powder-Coat Finish: Manufacturer's standard, baked, polyester, powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for correct and level finished grade, mounting surfaces, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION, GENERAL

- A. Comply with manufacturer's written installation instructions unless more stringent requirements are indicated. Complete field assembly of site furnishings where required.
- B. Unless otherwise indicated, install site furnishings after landscaping and paving have been completed.
- C. Install site furnishings level, plumb, true, and securely anchored at locations indicated on Drawings.

END OF SECTION 12 93 00

## SECTION 31 11 00 - CLEARING AND GRUBBING

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Section Includes
  - 1. Cutting of trees and other vegetation
  - 2. Removal of roots and related growth.
- B. Contractor shall coordinate work between all Subcontractors, sections, and trades required for the proper completion of the work.
- C. Contractor is responsible for all health and safety.

#### 1.2 REFERENCES

- A. Reference herein to any technical society, organization, group or regulation are made in accordance with the following abbreviations and, unless otherwise noted or specified, all work under this Section shall conform to the latest edition as applicable.
- B. State of Connecticut Department of Transportation (ConnDOT)
  - 1. Standard Specifications for Roads, Bridges and Incidental Construction, Form 816, 2004 and any supplements.
- C. Code of Federal Regulations (CFR)
  - 1. 29 CFR 1926, Safety and Health Regulations for Construction

#### 1.3 DEFINITIONS

- A. Clearing: Clearing shall consist in the felling, cutting up, and satisfactory disposal of trees and other vegetation designated for removal in accordance with these specifications.
- B. Drainage Course: Layer supporting basement grade used to minimize capillary flow of pore water.
- C. Grubbing: Grubbing shall consist of the removal of roots 1 ½ inch and larger, organic matter and debris, and stumps having a diameter of three inches or larger, to a depth of at least 18 inches below the surface and or subgrade; whichever is lower, and the disposal thereof.

#### 1.4 SAFETY REQUIREMENTS

- A. Contractor shall conduct all clearing and grubbing activities in conformance with applicable regulations, including those relating to barriers, warning signs, excavation safety, sheeting, shoring, and stabilization.
- B. Contractor shall provide and maintain barricades, warning signs, signs, lights, etc., required for the protection of personnel, materials and property. Temporary barricades, etc. shall conform all applicable codes and regulations, and shall be lighted at night with lanterns,

flares and reflectorized paint as required for safety. Adapt barricades, signs, lights, etc. to evolving site conditions throughout the progress of the work.

- C. Provide other safety devices as required, including adaptation of such safety devices to changing site conditions, to prevent unauthorized entry to construction areas. Provide warning signs and other temporary construction safety devices necessary for proper completion of the work in compliance with applicable safety regulations.

### 1.5 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are trained, experienced, and as required licensed, in the necessary crafts and who are completely familiar with the specified requirements and methods required for proper performance of the work in this Section. Use equipment of adequate size, capacity and quantity to accomplish the work of this Section in a timely manner.

### PART 2 PRODUCTS – NOT USED

### PART 3 EXECUTION

#### 3.1 PREPARATION

- A. Secure the work area and take precautions for preventing injuries to persons or damage to property in or about the work. Protect structures, utilities, sidewalks, pavements and other facilities or sensitive areas from damage by clearing and grubbing operations.
- B. Establish all required erosion and sedimentation controls prior to initiating work.

#### 3.2 CLEARING AND GRUBBING

- A. Clear, grub, remove, and dispose of all vegetation and debris within the limits of construction, as designated on the plans or as required by Engineer. Contractor shall remove only those trees and shrubs absolutely necessary to allow for the construction. The work shall also include the preservation and protection of all vegetation designated to remain.
- B. A preconstruction meeting shall be held with Engineer, Owner, local authorities, property owner(s) and other appropriate personnel, if required, prior to any clearing.
- C. The area within the limits of construction or as designated shall be cleared and grubbed of all trees, stumps, roots, brush, undergrowth, hedges, heavy growth of grasses or weeds, debris and rubbish of any nature which, in the opinion of Engineer, is unsuitable for foundation material. Nonperishable items that will be a minimum of five (5) feet below the finish elevation of the earthwork or slope of the embankment may be left in place.
- D. Contractor shall provide barricades, fences, coverings, or other types of protection necessary to prevent damage to existing improvements, not indicated to be removed, and improvements on adjoining property. All improvements damaged by this work shall be restored to their original condition or to a condition acceptable to the owner or other parties or authorities having jurisdiction.
- E. Protection of Trees and Vegetation: Contractor shall protect existing trees and other vegetation indicated on the Drawings to remain in place against cutting, breaking, or skinning of roots, skinning and bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip line, excess foot or vehicular

traffic, or parking of vehicles within drip line. Provide temporary fences or barricades as required to protect trees and vegetation to be left standing at no additional cost.

- F. Trees and shrubs that are to remain within the construction limits will be indicated on the Drawings or conspicuously marked on the Project Site. Unless otherwise noted, trees within the construction limits shall become the property of the Contractor and shall be removed from the site.
- G. Carefully and cleanly cut roots and branches of trees indicated to remain where the roots and branches obstruct construction of utilities or other subsurface improvements. Contractor shall provide protection for roots and branches over 1 ½ inches diameter that are cut during construction operations. Temporarily cover all exposed roots with wet burlap to prevent roots from drying out. Provide earth cover as soon as possible.
- H. Damaged trees and vegetation designated to remain shall be repaired or replaced at Contractor's expense in a manner acceptable to Engineer if they are damaged by construction operations. Repair tree damage as directed by a qualified tree surgeon.
- I. Trees and vegetation designated to remain shall be repaired or replaced at Contractor's expense in a manner acceptable to Engineer if they are damaged by construction operations. Repair tree damage as directed by a qualified arborist.
- J. All brush, tree tops, stumps, and debris shall be hauled away and disposed of in accordance with all applicable laws and regulations. Contractor shall clean up debris resulting from clearing operations continuously with the progress of the work and remove promptly all salvageable material that becomes his property and is not to be reused in construction. Sale of material on the site is prohibited. Debris from the site shall be removed in such a manner as to prevent spillage. Keep pavement and area adjacent to site clean and free from mud, dirt, dust, and debris at all times.
- K. The method of stripping, clearing and grubbing the site shall be at the discretion of the Contractor. However, all stumps, roots and other debris protruding through the ground surface or in excavated areas shall be completely removed to a minimum depth of 18 inches below surface and/or subgrade whichever is lower and disposed of off the site by the Contractor, at his expense.
- L. Marginal Areas: In marginal areas, with Engineer's permission, remove trees where the following conditions exist.
  - 1. Root Cutting: When clearing up to the "clearing limits," the Contractor shall also remove any tree which is deemed marginal such that when the roots are cut and the tree could be rendered unstable by the effects of high winds and in danger of toppling into either the right-of-way or onto private property.
  - 2. Slender Bending Trees: Where young, tall, thin trees are left unsupported by the clearing operation, and are likely to bend over into the right-of-way, Contractor, during the clearing operation, shall selectively remove those trees which are located outside and adjacent to the clearing limits and any right-of-way or easement as well. During the course of construction and during the one-year warranty period, the Contractor shall remove such young trees that overhang into the right-of-way or cleared area.

- M. Stripping of Topsoil: Remove the existing topsoil to a depth of 6 inches or to the depth encountered from all areas in which excavation will occur. The topsoil shall be stored in stockpiles, separate from the excavated material, if the topsoil is to be respread. Otherwise material shall be disposed of off-site at Contractor's expense.

### 3.3 DISPOSAL

- A. Contractor shall consolidate and clean-up debris resulting from clearing and grubbing operations continuously with the progress of the work.
- B. All brush, treetops, stumps, and debris resulting from clearing and grubbing operations shall be hauled away and disposed of in accordance with all applicable laws and regulations. Any materials salvaged by Contractor from clearing and grubbing operations shall be promptly removed from the Project Site.
- C. Contractor will be responsible for obtaining all applicable permits and paying all fees for the disposal of excess material.
- D. Sale of material on the Project Site is prohibited.
- E. Burning of material is prohibited.

END OF SECTION 31 11 00

## SECTION 31 23 10 - EARTHMOVING

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Preparation and grading subgrades for slabs-on-grade, walks, pavements, and landscaping.
  - 2. Excavating and backfilling for structures.
  - 3. Excavation and backfilling for underground utilities and associated appurtenances.
  - 4. Excavation, backfill and compaction for the demolition/removal of subsurface utilities and improvements.
  - 5. Earth retention systems.
- B. Contractor shall coordinate work between all Subcontractors, sections, and trades required for the proper completion of the work.
- C. Contractor is responsible for all health and safety.

#### 1.2 GENERAL

- A. Contractor is advised that lines and grades, as shown on the Drawings, are subject to change. Although it is intended to adhere to what is shown on Drawings, Engineer reserves the right to make changes in lines and grades of utilities r other subsurface construction when such changes may be necessary or advantageous.
- B. In open trenching on public roadways, Contractor shall be governed by the conditions, restrictions and regulations made by the local or state authority as applicable. All such regulations shall be in addition to those set down in the Specifications.

#### 1.3 EXCAVATION CLASSIFICATIONS

- A. Excavation - Excavation shall be unclassified and no consideration will be given to the nature of the materials, except Rock. Excavation shall comprise and include the satisfactory removal and disposal of all materials encountered regardless of the nature of the materials and shall be understood to include but not limited to earth, fill, foundations, pavements, curbs, piping, cobblestones, footings, bricks, concrete, previously abandoned drainage structures and utility structures and debris.
- B. Rock Excavation - Rock Excavation shall be defined for payment purposes as the excavation of Rock as defined herein.

#### 1.4 REFERENCES

- A. Reference herein to any technical society, organization, group or regulation are made in accordance with the following abbreviations and, unless otherwise noted or specified, all work under this Section shall conform to the latest edition as applicable.

- B. State of Connecticut Department of Transportation (ConnDOT)
  - 1. Standard Specifications for Roads, Bridges and Incidental Construction, Form 816, 2004 and any supplements.
- C. Code of Federal Regulations (CFR)
  - 1. 29 CFR 1926, Safety and Health Regulations for Construction
- D. American Concrete Institute (ACI)
  - 1. ACI 229R-99 - Controlled Low-Strength Materials (CLSM).
- E. American Society for Testing and Materials (ASTM)
  - 1. ASTM D422 - Standard Test Method for Particle-Size Analysis of Soils.
  - 2. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
  - 3. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup>(2,700 kN-m/m<sup>3</sup>)).
  - 4. ASTM D2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).
  - 5. AASTM D2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
  - 6. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
  - 7. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

## 1.5 DEFINITIONS

- A. Backfill: Soil material or flowable concrete used to fill an excavation.
- B. Bedding Course: Layer placed over the excavated sub-grade in a trench before laying pipe.
- C. Benching: A method of limiting cave-in potential by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.
- D. Borrow: Satisfactory soil imported from off-site for use as fill or backfill.
- E. Clearing: Clearing shall consist in the felling, cutting up, and satisfactory disposal of trees and other vegetation designated for removal in accordance with these specifications.
- F. Drainage Course: Layer supporting basement grade used to minimize capillary flow of pore water.
- G. Earth Retention Systems: Any structural system, such as sheeting and bracing or cofferdams, designed to retain in-situ soils in place and prevent the collapse of the sides of an excavation in order to protect employees and adjacent structures.

- H. Excavation: Any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.
  - 1. Additional Excavation: Excavation below subgrade elevations as directed by Architect. Additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
  - 2. Bulk Excavation: Excavations more than 10 feet in width and pits more than 30 feet in either length or width.
  - 3. Unauthorized Excavation: Excavation below sub-grade elevations or beyond indicated dimension without direction by Architect. Unauthorized excavation, as well as remedial Work directed by Architect, shall be without additional compensation.
- I. Fill: Soil materials used to raise existing grades.
- J. Finished Grade: The proposed final elevations shown on the Drawings or called for in the Specifications.
- K. Geotechnical Testing Agency: An independent testing agency, employed by the Owner and qualified according to ASTM E 329 to conduct soil materials and rock-definition testing, as documented according to ASTM D 3740 and ASTM E 548.
- L. Grubbing: Grubbing shall consist of the removal of roots 1 ½ inch and larger, organic matter and debris, and stumps having a diameter of three inches or larger, to a depth of at least 18 inches below the surface and or subgrade; which ever is lower, and the disposal thereof.
- M. Protective System: A method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Protective systems include earth retention systems, sloping and benching systems, shield systems, and other systems that provide the necessary protection.
- N. Rock: Consolidated natural material that when tested by an independent geotechnical testing agency according to ASTM D1586, exceeds a standard penetration resistance of 100 blows per two inches. All boulders containing a volume of more than one-half cubic yard which cannot be removed without systematic drilling or hoe ramming will be classified as Rock.
- O. Licensed Professional Engineer: A person who is licensed as a professional engineer in the state where the work is to be performed. However, a professional engineer, registered in any state is deemed to be a "registered professional engineer" within the meaning of this standard when approving designs for "manufactured protective systems" or "tabulated data" to be used in interstate commerce.
- P. Select Fill: Any earth material defined in this Section that is not Common Fill/Ordinary Borrow.
- Q. Shield System: A structure that is designed to withstand the forces imposed on it by a cave-in and thereby protects employees within the structure. Shields can be permanent structures or can be designed to be portable and moved along as work progresses. Additionally, shields



can be either pre-manufactured or job-built in accordance with 29 CFR 1926.652(c)(3) or (c)(4). Shields used in trenches are usually referred to as "trench boxes" or "trench shields."

- R. Sloping: A method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation so as to prevent cave-ins. The angle of incline required to prevent a cave-in varies with differences in such factors as the soil type, environmental conditions of exposure, and application of surcharge loads.
- S. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- T. Sub-grade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below drainage fill.
- U. Surplus Material: Excavated acceptable material that cannot be utilized elsewhere on the site as backfill or embankment fill, or as otherwise directed by the Engineer.
- V. Temporary Dewatering System: A system to lower and control water to maintain stable, undisturbed subgrades at the lowest excavation levels. Dewatering shall be provided for all pipelines, structures and for all other miscellaneous excavations.
- W. Trench: A narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet.
- X. Unacceptable Material: Soil material that contains organic silt, peat, vegetation, wood or roots, stones or rock fragments over six (6) inches in diameter or exceeding 40 percent by weight of the backfill material, porous biodegradable matter, loose or soft fill, construction debris, or refuse, or material which cannot be compacted to the specified or indicated density.

#### 1.6 SAFETY

- A. Contractor shall conduct all excavation activities in conformance with applicable regulations, including those relating to warning signs, excavation safety, sheeting, shoring, and stabilization.
- B. Contractor shall provide and maintain barricades, signs, lights, etc., required for the protection of personnel, materials and property. Temporary barricades, etc. shall conform all applicable codes and regulations, and shall be lighted at night with lanterns, flares and reflectorized paint as required for safety. Adapt barricades, signs, lights, etc. to evolving site conditions throughout the progress of the work.
- C. Provide other safety devices as required, including adaptation of such safety devices to changing site conditions, to prevent unauthorized entry to construction areas and open excavations. Provide warning signs and other temporary construction safety devices necessary for proper completion of the work in compliance with applicable safety regulations.

- D. Contractor shall properly design and furnish all labor, materials, equipment, and tools necessary to completely construct the excavation support system, permanent or temporary, including sheet piling, trench shields, trench boxes, timber trench shoring, pneumatic/hydraulic shoring, steel sheeting or sheeting using other materials, sloping and benching. All of the proper materials and all equipment necessary to protect employees in excavations against cave-ins shall be furnished and installed.
- E. Any time an excavation is to remain open, at a minimum, provide full enclosure with safety barriers and fencing, warning signs, and additional safety control measures as appropriate.

## 1.7 SUBMITTALS

- A. Site Characterization of Off-Site Borrow Sources: The following information shall be submitted to Engineer for review at least two weeks prior to use of an off-site borrow source:
  - 1. Location and name of the borrow source site.
  - 2. Owner and contact information for the borrow source site.
  - 3. Present and past usage of the source site and materials.
  - 4. Any previously existing report(s) associated with an assessment of the source site as relates to the presence of oils, hazardous materials, or other organic and non-organic constituents which may be considered contaminants.
  - 5. Location within the site from which the material will be obtained.
  - 6. Physical Analysis: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated. Prepare separate reports for each type and application of borrow material.
    - a. Classification: ASTM D 2487.
    - b. Gradation Analysis (Sieve Analysis): ASTM D 422
    - c. Moisture and Density Relationship Curve (Modified Proctor Analysis): ASTM D 1557.
    - d. Classification and laboratory compaction curve for on-site soil material, in accordance with the above requirements, when requested by the Engineer.
  - 7. Chemical Analysis
    - a. Obtain one composite sample for every 500 cu. yds. of soil/material with at least three samples for each soil/material type from each borrow source location. Analyze each for pesticides (EPA Method 8081), Chlorinated Herbicides (EPA Method 8151), Polyaromatic Hydrocarbons (EPA Method 8270), Total Petroleum Hydrocarbons (CTETPH method), Total RCRA 8 Metals (EPA Method 6010 / 7421 / 7470), Volatile Organic Compounds (EPA Method 8260), and Polychlorinated Biphenyls (EPA Method 8082). Based on the results of this testing, additional Synthetic Precipitation Leaching

Procedure (SPLP) or Toxicity Characteristic Leaching Procedure (TCLP) testing may be required at the discretion of the Engineer. The Owner reserves the right to reject material based on the results of this testing.

- 1) Satisfactory soil/material shall not exceed laboratory detection limits for concentrations of Pesticides, Chlorinated Herbicides, Polyaromatic Hydrocarbons, Total Petroleum Hydrocarbons, Volatile Organic Compounds, and Polychlorinated Biphenyls.
  - 2) Satisfactory soil/material shall not exceed naturally occurring background levels for concentrations of RCRA-8 Metals in native soils on site.
  - 3) In no case shall soil/material exceed any GA pollutant mobility criteria (GA PMC) or residential direct exposure criteria (RES DEC) established in Sections 22a-133k-1 through 22a-133k-3 of the regulations of Connecticut State Agencies.
8. Soil/Material Origin: Provide a description for each originating off-site location or project from which imported soil/material is obtained, including known historical activities occurring on the site, and any possible releases that have occurred. The following are not acceptable :
- a. Soils/materials originating from sites subject to any Federal or State remediation program.
  - b. Soils/materials that have undergone any treatment process for one or more chemical constituents listed within the Connecticut Remediation Standard Regulations (CT RSRs).
9. Chemical Testing Data: For each type/classification and source of earth material proposed, submit a letter signed by an authorized representative of Contractor stating that such proposed earth material is free of oils, hazardous materials, or other organic and non-organic constituents which may be considered contaminants.
- B. Samples
1. 50-pound sample of each type of off-site bedding, fill, aggregates, and backfill that are proposed for use at the Project Site in an air-tight container for the testing laboratory, a minimum of one week prior to delivery of such material to the site. Use of these proposed materials by Contractor prior to testing and approval or rejection shall be at Contractor's risk.
- C. Product Data
1. Plastic warning tape.
  2. Separation fabric, filter fabric, geogrids, or similar geotextiles.

## 1.8 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and methods required

for proper performance of the work in this Section. Use equipment of adequate size, capacity and quantity to accomplish the work of this Section in a timely manner.

- B. Codes and Standards: Perform the work of this Section in accordance with all applicable codes, standards, and the requirements of authorities having jurisdiction.
- C. Engineer reserves the right to perform all in-field testing specified in this Section and reserves the right to determine the suitability of all materials to be used for fills and reject any fill not meeting the specifications.
- D. Field Density testing and subgrade observation shall be performed by the designated entity
- E. Weather Limitations:
  - 1. Material excavated when frozen or when air temperature is less than 32 degrees Fahrenheit (32 F) shall not be used as fill or backfill until material completely thaws.
  - 2. Material excavated during inclement weather shall not be used as fill or backfill until after material drains and dries sufficiently for proper compaction.

#### 1.9 TESTING

- A. Testing by Owner: The Owner will retain a testing entity (testing representative) to perform field observation and testing of the work under this Section. The testing entity's presence does not constitute supervision or direction of Contractor's work. Neither the presence of the testing entity nor any observations and testing performed by him, nor any notice or failure to give notice shall excuse Contractor from conformance with these Specifications or from defects discovered in his work.
- B. Testing by Contractor:
  - 1. All tests shall be within one calendar year of project construction.
  - 2. Gradation analysis for each type of borrow and on-site fill materials by ASTM D422.
  - 3. Soil classification (ASTM D2487) and Moisture-Dry Density Curve (Proctor Test-Modified) by ASTM D1557 for all proposed fill and backfill materials.
  - 4. Frequency: Perform tests from each proposed material source, at a rate of one test for every 1,000 cubic yards of soil type.
  - 5. Chemical Testing: Prior to delivery of any earth material to the Project Site, conduct chemical testing to demonstrate that such material is free of oils, hazardous materials, or other organic and non-organic constituents which may be considered contaminants. Refer to "Chemical Analysis" under Article 1.7 herein.

#### 1.10 SEPARATION OF SURFACE MATERIALS

- A. When excavations are to be made in paved surfaces, the pavement shall be removed so as to provide a clean uniform edge with a minimum disturbance of remaining pavement. Saw cutting the pavement to provide a clean, uniform edge shall normally be required, unless otherwise approved in the Contract.

- B. If pavement is removed in large pieces, it shall not be mixed with other excavated material, but shall be disposed of away from the site of the Work before the remainder of the excavation is made.
- C. The attention of the Contractor is directed to the specifications for replacing pavement.

#### 1.11 EXCAVATED MATERIAL

- A. Placement
  - 1. Excavated material shall be so placed as not to interfere with travel or movement on existing streets, driveways, sidewalks or other areas designated to remain undisturbed. Excavated material shall not be deposited on private property without the written consent of the property owner(s) and approval of Engineer.
  - 2. No excavated material shall be stored on top of installed pipe or other construction. Contractor shall consider surcharge loads when stockpiling excavated material adjacent to trenches, and take any measure required to prevent cave-in, including but not limited to, trench support systems and/or stockpiling excavated material remote from trench.
- B. No excavated materials shall be removed from the Project Site or disposed of by Contractor, except as approved by Engineer.
- C. Suitable excavated material may be used for Common Fill or Backfill on other parts of the Work, if specifically approved by Engineer.
- D. Material excavated from private property shall belong to the property Owner, or his representative, and shall be disposed of by the Contractor, as required by said Owner or his representative. If the Contractor fails to promptly remove such surplus material, Engineer may have the same done and charge the cost thereof as money paid to the Contractor.
- E. Contractor shall be responsible for the proper disposal of all unsuitable excavated materials. Owner's testing representative will determine what is suitable or unsuitable material where questions arise.

#### 1.12 SHEETING, SHORING AND BRACING

- A. Provide earth retention systems as required by federal, state and local regulations. Shoring and bracing of trenches and other excavations shall be in accordance with the latest OSHA Standards and Interpretations, and to all other applicable codes, rules and regulations of federal, state and local authorities.

#### 1.13 DRAINAGE

- A. At all times during construction, Contractor shall temporarily provide, place and maintain ample means and devices with which to remove promptly, and dispose of properly, all water entering trenches and other excavations, or water that may flow along or across the site of the Work, and keep said excavations dry until the structures, pipes, and appurtenances to be built therein have been completed to such extent that they will not be damaged. At the conclusion of the work, Contractor shall remove such temporary means and devices.

- B. All groundwater which may be found in the trenches and foundation excavations, and any water which may get into them from any cause whatsoever, shall be pumped or bailed out, so that the trench shall be dry during pipe laying and backfilling and during the placement of concrete.
- C. All water pumped or drained from the Work shall be managed in accordance with applicable specification sections and discharge permits, without undue interference with other work or damage to pavements, other surfaces, or property.

#### 1.14 UTILITIES

- A. Prior to commencing earthwork operations, comply with utility mark-out requirements of the Call-Before-You-Dig System (1-800-922-4455).
  - 1. Confirm the location of all subsurface utilities marked through the Call-Before-You-Dig System.
  - 2. Not all subsurface facilities or structures will be identified through the Call-Before-You-Dig System. Confirm the location of other subsurface facilities or structures prior to commencing earthwork operations. Field-mark utilities as required.

#### 1.15 COORDINATION

- A. Prior to commencing earthwork operations, meet with representatives of governing authorities, Engineer, testing entity, and other pertinent entities.
  - 1. Review earthwork procedures and responsibilities including Contractor's schedule of operations, scheduling observation and testing procedures and requirements.
  - 2. Notify participants at least three (3) working days prior to convening conference. Record discussions and agreements and furnish copies to each participant.
  - 3. Contractor shall at all times so conduct his work as to insure the least possible inconvenience to the general public and the residents in the vicinity of the work. Fire hydrants on or adjacent to the work shall be kept accessible to firefighting equipment at all times. Temporary provisions shall be made by Contractor to ensure the proper functioning of all gutters, sewer inlets, drainage ditches, and irrigation ditches, which shall not be obstructed except as approved by Engineer.
- B. Benchmark/Monument Protection: Protect and maintain benchmarks, monuments or other established reference points and property corners. If disturbed or destroyed, replace at no cost to Owner.
- C. Provide five (5) days advance notice to Engineer and testing entity for any proposed earthwork operation requiring observation and/or testing.

## PART 2 PRODUCTS

### 2.1 SOIL MATERIALS

- A. Satisfactory materials shall not contain shale, clay, ash, slag, friable material, organic or vegetative materials, topsoil, wood, trash, broken concrete, masonry rubble, trash, refuse, or frozen materials.
- B. Unsatisfactory Soils: Soil materials not meeting the requirements for Satisfactory Soils.
  - 1. Unsatisfactory soils also include satisfactory soils not maintained within two (2) percent of optimum moisture content at time of compaction.

2.2 COMMON FILL/ORDINARY BORROW

- A. Earth materials classified by ASTM D 2487 as GW, GP, GM, GP-GM, GW-GM, GP-GC, SW, SP, and SM that are free of clay.
- B. Common Fill material is subject to the approval of Engineer and may be either material removed from excavations or borrow from off site. It shall have physical properties such that it can be readily spread and after it has been placed and properly compacted, it will form a dense, stable fill.
- C. Common Fill shall be graded as follows:

Gradation of Common Fill

Sieve	Percent Passing by Weight
6"	100
3.5 "	50-100
3/4"	50-80
No. 4	25-55
No. 200	0-20

- 1. Common Fill shall not be used at locations where use of a Select Fill is indicated.

2.3 BANK RUN GRAVEL

- A. Granular material, well graded from fine to coarse, obtained from approved natural deposits and unprocessed, except for the removal of unacceptable material and stones larger than the maximum size permitted.
- B. Bank Run Gravel shall be graded as follows:
  - 1. Gradation of Bank Run Gravel (ConnDOT Grading "C")

Sieve	Percent Passing by Weight
1 1/2"	100
3/4"	45-80
1/4	25-60
No. 10	15-45
No. 40	5-25
No. 100	0-10
No. 200	0-5

2.4 GRANULAR FILL

- A. Broken or crushed stone, gravel, or a mixture thereof.
- B. Broken or crushed stone
  - 1. The product resulting from the artificial crushing of rocks, boulders or large cobblestones, substantially all faces of which have resulted from the crushing operation. Broken or crushed stone shall consist of sound, tough, durable stone, reasonably free from soft, thin, elongated, laminated, friable, micaceous or disintegrated pieces.
- C. Bank or crushed gravel
  - 1. Sound, tough, durable particles of crushed or uncrushed gravel, free from soft, thin, elongated or laminated pieces and vegetable or other deleterious substances. Crushed gravel shall be the manufactured product resulting from the deliberate mechanical crushing of gravel with at least 50% of the gravel retained on the No. 4 sieve having at least one fractured face.
- D. Granular Fill shall be graded as follows:
  - 1. Gradation of Granular Fill (ConnDOT Grading "A")

Sieve	Percent Passing by Weight
3 1/2"	100
1 1/2"	55-100
1/4"	25-60
No. 10	15-45
No. 40	5-25
No. 100	0-10
No. 200	0-5

2.5 SCREENED GRAVEL AND CRUSHED STONE

- A. Screened gravel, well graded in size from 3/8 inch to 3/4 inch. The gravel shall consist of clean, hard, and durable particles or fragments. Crushed rock of suitable size and grading may be used instead of screened gravel.
- B. Screened Gravel shall be graded as follows:
  - 1. Gradation of Screened Gravel (ConnDOT Gradation No. 6)

Sieve	Percent Passing by Weight
1"	100



3/4"	90-100
1/2"	20-55
3/8"	0-15
No. 4	0-5

## 2.6 SUBBASE

### A. Bank or Crushed Gravel

1. Sound, tough, durable particles of crushed or uncrushed gravel, free from soft, thin, elongated or laminated pieces. It shall be hard and durable enough to resist weathering, traffic abrasion and crushing.
2. Bank or crushed gravel for subbase shall be graded as follows:
3. Gradation of Bank or Crushed Gravel Subbase (ConnDOT Gradation "B")

Sieve	Percent Passing by Weight
5"	100
3 1/2"	90-100
1 1/2"	55-95
1/4"	25-60
No. 10	15-45
No. 40	5-25
No. 100	0-10
No. 200	0-5

### B. Crusher-Run Stone

1. Sound, tough, durable broken stone. It shall be reasonably free from soft, thin, elongated, laminated, friable, micaceous or disintegrated pieces.
2. Loss on Abrasion: The crusher-run stone shall show a loss on abrasion of not more than fifty percent using AASHTO Method T 96.
3. Crusher-run stone shall for subbase shall be graded as follows:
4. Gradation of Crusher Run Stone Subbase (ConnDOT Gradation "A")

Sieve	Percent Passing by Weight
3 1/2"	100
1 1/2"	55-100
1/4"	25-60
No. 10	15-45
No. 40	5-25
No. 100	0-10
No. 200	0-5

2.7 PROCESSED AGGREGATE BASE

- A. Coarse aggregates and fine aggregates shall be combined and mixed by approved methods so that the resulting material shall conform to the following gradation:

1. Gradation of Processed Aggregate Base

Sieve	Percent Passing by Weight
2 1/2"	100
2"	95-100
3/4"	50-75
1/4"	25-45
No. 40	5-20
No. 100	2-12

- B. Coarse Aggregate: Either gravel, broken stone or a combination thereof. When tested by means of the Los Angeles Machine, using AASHTO Method T 96, the coarse aggregate shall not have a loss of more than 50%.

1. If gravel is used for the coarse aggregate, it shall consist of sound, tough, durable particles of crushed or uncrushed gravel or a mixture thereof, free from soft, thin, elongated or laminated pieces, lumps of clay, loam and vegetable or other deleterious substances.
2. If broken stone is used for the coarse aggregate, it shall consist of sound, tough, durable fragments of rock of uniform quality throughout. It shall be free from soft disintegrated pieces, mud, dirt, organic or other injurious material.
3. Soundness for Gravel and Broken Stone: When tested by magnesium sulfate solution for soundness using AASHTO Method T 104, the coarse aggregate shall show a loss of not more than 15% at the end of 5 cycles.

- C. Fine Aggregate: Natural sand, stone sand, screenings or any combination thereof. The fine aggregate shall be limited to material 95% of which passes a No. 4 (4.75-mm) sieve having square openings and not more than 8% of which passes a No. 200 (75- $\mu$ m) sieve. The material shall be free from clay, loam and deleterious materials.

1. Plasticity: When natural sand is used, the fine aggregate shall conform to the following:
  - a. When the fraction of the dry sample passing the No. 100 mesh sieve is 4% or less by weight (mass), no plastic limit test will be made.
  - b. When the fraction of the dry sample passing the No. 100 mesh sieve is greater than 4% and not greater than 8% by weight (mass), that fraction shall not have sufficient plasticity to permit the performing of the plastic limit test using AASHTO Method T 90.
  - c. When the fraction of the dry sample passing the No. 100 mesh sieve is greater than 8% by weight (mass), the sample will be washed; and the additional

material passing the No. 100 mesh sieve shall be determined by AASHTO Method T 146, except that the No. 100 mesh sieve will be substituted for the No. 40 mesh sieve where the latter is specified in AASHTO Method T 146. The combined materials that passed the No. 100 mesh sieve shall not have sufficient plasticity to permit the performing of the plastic limit test using AASHTO Method T 90.

2. Plasticity: When screenings or any combination of screenings and natural sand or any combination of stone sand and natural sand are used, the following requirements shall apply:
  - a. When the fraction of the dry sample passing the No. 100 mesh sieve is 6% or less by weight (mass), no plastic limit test will be made.
  - b. When the fraction of the dry sample passing the No. 100 mesh sieve is greater than 6% and not greater than 10% by mass, that fraction shall not have sufficient plasticity to permit the performing of the plastic limit test, using AASHTO Method T 90.
  - c. When the fraction of the dry sample passing the No. 100 mesh sieve is greater than 10% by weight (mass), the sample shall be washed; and additional material passing the No. 100 mesh sieve shall be determined by AASHTO Method T 146, except that the No. 100 mesh sieve shall be substituted for the No. 40 mesh sieve where the latter is specified in AASHTO Method T 146. The combined materials that have passed the No. 100 mesh sieve shall not have sufficient plasticity to permit the performing of the plastic limit test using AASHTO Method T 90.

## 2.8 BEDDING

### A. Slabs on grade

1. Granular Fill unless otherwise indicated.

### B. Utilities

1. Unless otherwise indicated for a specific utility, bedding shall consist of screened gravel, maximum size 3/4 inches and minimum size 3/8 inches.
2. Flexible Pipe: Unless otherwise indicated, ASTM D2321, bedding, haunching, and initial backfill material shall be placed in six-inch lifts and be Class IA, IB, or II embedment material unless otherwise approved by Engineer.
3. When clay, wet, soft or silty soil conditions prevail, 3/4-inch crushed stone shall be used for bedding of pipe.

## 2.9 SAND

- A. Sand shall consist of clean, hard, durable, uncoated particles of quartz or other rock. It shall not contain more than 3% of material finer than a #200 sieve.

- B. Organic Impurities: Fine aggregate subjected to the colorimetric test shall not produce a color darker than Gardner Color Standard No. 11, using AASHTO T 21. If the fine aggregate fails to meet this requirement, the provisions of AASHTO M 6, Section 5.2, will govern.
- C. Sand shall be uniformly graded as follows:

Gradation of Sand

Sieve	Percent Passing by Weight
3/8"	100
No. 4	95-100
No. 8	80-100
No. 16	50-85
No. 30	25-60
No. 50	10-30
No. 100	2-10

- D. The above gradation represents the extreme limits which shall determine suitability for use from all sources of supply. The gradation from any one source shall be reasonably uniform and not subject to the extreme percentages of gradation specified above. For the purpose of determining the degree of uniformity, a fineness modulus determination will be made upon representative samples from any source. Fine aggregate from any one source having a variation in fineness modulus greater than 0.20 either way from the fineness modulus of the representative sample will be rejected.

2.10 FLOWABLE CONCRETE FILL/BACKFILL (FLOWFILL)

- A. Cementitious material, ACI 229R, comprised of cement, aggregates, fly ash, water, and admixtures, capable of being poured or pumped, self-leveling, self curing to specified strengths.
- B. Excavatable flowfill: Concrete strength shall be liquid enough to flow, be self-leveling and excavatable by hand methods. Unless otherwise specified, excavatable flowfill shall have a minimum 28 day compressive strength of 30 psi, and shall not exceed 100 psi.
- C. Non-excavatable flowable: Concrete strength shall be liquid enough to flow and be self-leveling and excavatable by machine equipment. Unless otherwise specified, non-excavatable flowfill shall have a minimum 28-day compressive strength of 125 psi, and shall not exceed 200 psi.

2.11 DETECTABLE WARNING TAPE

- A. Acid and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, minimum 6 inches wide and 4 mils thick, continuously inscribed with a description of utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:

1. Red: Electric power lines, electric power conduits and other electric power facilities.
2. Yellow: Gas, oil petroleum products, steam, compressed air, compressed gas and all other hazardous materials.
3. Blue: Water.
4. Orange: Communication lines or cables, including but not limited to telephone, fire signals, cable television, and electronic controls.
5. Green: Storm drainage and sanitary sewer systems, including force mains and other non-hazardous materials.
6. Brown: Chilled Water and Other.

### PART 3 EXECUTION

#### 3.1 PREPARATION

- A. Notify “Call-Before-You-Dig” to request a utility mark-out for the Project Site prior to any earth disturbance. Provide written confirmation to Engineer that such mark-out has been completed..
- B. Take precautions for preventing injuries to persons or damage to property in or about the work. Protect structures, utilities, sidewalks, pavements and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.
- C. Protect sub-grades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.
- D. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

#### 3.2 CLEARING AND GRUBBING

- A. Clear, grub, remove, and dispose of all vegetation and debris within the limits of construction, as designated on the plans or as required by Engineer. Contractor shall remove only those trees and shrubs absolutely necessary to allow for the construction. The work shall also include the preservation from injury or defacement of all vegetation or object designated to remain. Refer to Division 31 section “Clearing and Grubbing”.

#### 3.3 DEWATERING

- A. Comply with all applicable permit requirements.
- B. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrade and from flooding Project site and surrounding area.
- C. Protect sub-grades from softening, undermining, washout and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.
2. Install de-watering system to keep subgrades dry and convey ground water away from excavations.

### 3.4 EXCAVATION

- A. Dust Control: During the progress of the Work, Contractor shall conduct his operations and maintain the area of his activities in order to minimize the creation and dispersion of dust. Refer to Division 01 Section "Temporary Dust Control."
- B. Make excavations in such manner, and to such widths, as will give suitable room for building the structures or laying and joining pipe, but complying with the trench limits shown on the drawings; shall furnish and place all sheeting, bracing, and supports; and shall render the bottom of the excavation firm and dry, and in all respects, acceptable.
- C. Excavate to the exact elevations shown on the plans, or as directed by Engineer. If Contractor excavates below the elevations specified on the plans, he shall bring the excavation back to the proper elevation (except as hereinafter noted) by backfilling with Granular Fill and tamping to provide a compact base in accordance with the provisions specified herein.
  1. Any increase in cost resulting from backfilling, or increasing the size of the footings or foundations, because of over-excavation in depth, unless the over-excavation is at the direction of Engineer, shall be at Contractor's expense. Excavation and replacement with structural fill of any disturbed or softened materials below the bottom of footing, resulting from inadequate preparation, dewatering, or protection of the bearing surface, shall be at Contractor's expense.
- D. If utilities are to be laid in new embankments, or other new fill areas which are more than 12 inches deep below the invert of the pipe, the fill material shall be placed and properly compacted to final grade or to a height of at least 3 feet above the top elevation of the pipe, whichever is the lesser, before laying pipe. Particular care shall be taken to ensure maximum consolidation of material under the pipe location. The pipe trench shall then be excavated as though in undisturbed material.

### 3.5 TRENCH EXCAVATION

- A. In general, trenches shall be excavated to such depth as will provide a cover depth as indicated on the drawings from finished grade to the top of the pipe barrel. Deeper trenches shall be provided where necessary on account of the conformation of the ground and to permit the alignment of the pipe without undue deflection of joints.
- B. Trenches shall be excavated by hand or machinery to the width and depth indicated on the Drawings and specified herein. Depth shall account for thickness of the pipe and thickness of bedding. All loose materials shall be removed from the bottom of the trench so that the bottom of the trench will be in an undisturbed condition.

- C. If in the opinion of Engineer, the material at or below the depth to which excavation for structures and pipes would normally be carried is unsuitable for foundation, it shall be removed to such widths and depths as directed and replaced with suitable material.
- D. Trench widths shall be 3 feet greater than the nominal inside diameter of pipe for such diameters of 36 inches or less. For diameters greater than 36 inches, the width shall be 4 feet greater than nominal inside diameter. Trench excavation for manholes, catch basins, drop inlets, etc. shall be two (2) feet outside the neat lines of the foundations. These limits may be adjusted for field conditions at the direction of Engineer.
- E. Bedding for pipe and utility structures will be as detailed on the Drawings.

### 3.6 TUNNELING

- A. In general, excavation shall be made in open cut from the surface and Contractor shall not be allowed to do any tunneling without obtaining permission from Engineer, and then only according to methods approved by him, and at no additional cost to the Owner. This permission will only be given where a line is to be laid to a point behind the curb, across a paved street, or where, in the opinion of the Engineer, it is necessary to tunnel short sections on account of proximity of adjacent walls, utilities, structures, to avoid important roots of trees or large masses of roots, or to ensure against root damage endangering the life of trees near the pipeline location. Such excavations then can be made in alternate sections of open cut and tunnel, the length of the tunnel sections to be specified by Engineer. These tunnel sections shall be cut underneath to a wedge with its edge horizontally across the pipe, and backfilled tightly by ramming and tamping from each end.

### 3.7 APPROVAL OF SUBGRADE

- A. Notify University testing entity when excavations have reached required sub-grade.
- B. If University testing entity determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Reconstruct sub-grades damaged by freezing temperatures, frost, rain, accumulated water or construction activities, as directed by Engineer.

### 3.8 PROTECTION OF EXISTING FEATURES

- A. General
  - 1. All existing pipes, poles, wires, fences, curbing, property-line markers, and other structures which, in the opinion of Engineer, must be preserved in place without being temporarily or permanently relocated, shall be carefully supported and protected from damage by Contractor.
  - 2. As excavation approaches underground structures, digging by machinery shall be discontinued and the excavation shall be done by means of hand tools.
- B. Pavements: On paved surfaces to remain, do not use or operate tractors, bulldozers, or other power-operated equipment, the treads or wheels of which are so shaped as to cut or otherwise damage such surfaces. All surfaces, which have been damaged by Contractor's

operations, shall be restored to a condition at least equal to that in which they were found immediately prior to the beginning of operations. Suitable materials and methods shall be used for such restoration.

C. Utilities

1. Existing utilities remaining in service, including those remaining in service until after relocation, and relocated utilities shall be protected from damage. Before excavating near any existing utilities, notify the utility owner, coordinate protective work and comply with the utility owners' requirements.
2. Safeguard and protect from damage or movement any existing services, utilities and utility structures uncovered or encountered which are to remain in service.
3. All utility services shall be supported by suitable means so that the services shall not fail when tamping and settling occurs.
4. Where known utilities are encountered, notify Engineer and document location and type of utility before proceeding with work in such area.
5. When uncharted or incorrectly charted piping or utilities are encountered during excavation, stop work and notify Engineer immediately. Cooperate with the utility owners in maintaining their utilities in operation prior to resuming work.

D. Retaining Structures: Provide bracing, shoring, sheeting, sheet piling, underpinning or other retaining structures necessary to guard against any movement or settlement of existing or new construction, utility systems, paving, or other improvements. Assume responsibility for the strength and adequacy of retaining structures, and for the safety and support of construction, utilities or paving, and for any movement, settlement or damage thereto. Retain the services of a licensed engineer as required to design bracing, shoring, sheeting, sheet piling, underpinning or other retaining structures.

E. Replacement and Relocation

1. In case of damage, Contractor shall notify the appropriate party so that proper steps may be taken to repair any and all damage done. When the Owner does not wish to make the repairs themselves, all damage shall be repaired by Contractor, or, if not promptly done by him, Engineer may have the repairs made at the expense of Contractor.
2. If certain existing structures are encountered that in the opinion of Engineer require temporary or permanent relocation or removal, Engineer may order in writing that Contractor undertake all or part of such work or to assist the Owner in performing such work. For such occurrences, Contractor shall be compensated as applicable, as extra work.
  - a. In removing existing structures, Contractor shall use care to avoid damage to the material, and Engineer shall include for payment only those new materials, which, in his judgment, are necessary to replace those unavoidably damaged.



3. The structures to which the provisions of the preceding two paragraphs shall apply include structures which (1) are not indicated on the drawings or otherwise provided for, (2) encroach upon or are encountered near and substantially parallel to the edge of the excavation, and (3) in the opinion of Engineer will impede progress to such an extent that satisfactory construction cannot proceed until they have been changed in location, removed (to be later restored), or replaced. (See Item 3.19, "Sub-Surface Obstructions" also).

### 3.9 FILL AND BACKFILL

- A. Fill: Contractor shall remove loam and topsoil, loose vegetable matter, stumps, large roots, etc., from areas upon which embankments will be built or material will be placed for final grading. The subgrade shall be shaped as indicated on the drawings and shall be so prepared by forking, furrowing, or plowing that the first layer of the new material placed thereon, will be well bonded to it.
- B. Backfill: Common Fill material may be used as backfill when authorized by Engineer, if Contractor can achieve required minimum dry density after compaction. Backfilling shall be done as promptly as is consistent with non-injury to the pipe or structures, but no backfilling shall be done before Engineer gives permission. Where the trench is in a paved area, or an area to be paved, backfill shall be bank-run gravel as shown on the drawings.
- C. Frozen material shall not be placed in fill, nor shall fill be placed upon frozen material. Previously frozen material shall be removed, or shall be otherwise treated as required, before new fill is placed.
- D. After the subgrade has been prepared, fill material shall be placed thereon and built up in successive layers not exceeding twelve (12) inches until it has reached the required elevation.
  1. When gravel fill or other material is used for foundation of structures, it shall be spread in layers of uniform thickness not exceeding six (6) inches before compaction. Each spread layer shall be thoroughly compacted by means of suitable power-driven tampers or other power-driven equipment.
- E. Each layer of material shall be compacted by the use of approved rollers, or other approved means, so as to secure a dense, stable, and thoroughly compacted mass. At such points as cannot be reached by mobile mechanical equipment, or where such equipment is not permitted, the materials shall be thoroughly compacted by the use of suitable power-driven tampers.
- F. Previously placed or new materials shall be moistened by sprinkling, if required, to ensure proper bond and compaction. No compacting shall be done when the material is too wet, from either rain or application of water, to compact it properly. At such times the work shall be suspended until the previously placed and new materials have dried out sufficiently to permit proper compaction, or such other precautions shall be taken as may be necessary to obtain proper compaction.

- G. Compaction Density: Compaction density shall be expressed as a percentage of maximum dry density at optimum moisture content according to ASTM D 1557 Method C. Density indicated is minimum required.
1. Under structures, building slabs, and steps: 95 %
  2. At building foundations: 95 %
  3. Utilities, below pipe centerline: 95%
  4. Utilities below unpaved surface, above pipe centerline: 92%
  5. Utilities below paved surface, above pipe centerline: 95%
  6. Embankments: 92%
  7. Landscaped areas: 90 %.
- H. Upon completion of filling and backfilling, the streets or property shall be cleaned, surplus material removed and the surfaces restored to the condition in which it was before ground was broken. All materials left over in public roadways shall become the property of the Contractor. If the Contractor fails to promptly remove such surplus material, Engineer may have the same done, and charge the cost thereof as money paid to the Contractor.

### 3.10 BACKFILLING UTILITIES AROUND STRUCTURES

- A. No backfill shall be deposited against concrete until the concrete has obtained sufficient strength to withstand the earth pressure placed upon it and in no case less than seven days, nor before carrying out and satisfactorily completing the tests for watertight structures specified elsewhere. Compaction of backfill against concrete structures shall not be carried out by motorized equipment closer to the structure than the depth of the structure below grade.

### 3.11 BACKFILLING UTILITIES

- A. As soon as practical after utility has been placed into bedding and joints properly made, backfilling shall begin, and shall continue without delay.
- B. Placement of bedding over pipe prior to placement of backfill shall be as indicated on the Drawings. Hand-place bedding at the sides of the pipe and to the limits indicated on the Drawings over the pipe. Bedding placed over pipe shall be in 6-inch layers, leveled along the length and width of the trench and thoroughly compacted with approved tampers.
- C. Install warning tape twelve (12) inches to twenty-four (24) inches above the utility unless otherwise specified by the utility owner/operator.

### 3.12 BACKFILL AT BUILDINGS

- A. Prior to placing compacted granular fill, subgrade shall be compacted with at least four passes of a minimum 10-ton dynamic force vibratory roller. Soft or loose material evident during compaction shall be removed and replaced with granular fill.
- B. Backfill as soon as permanent work has been completed and footings, piers, foundation walls, etc., have attained sufficient set and strength.

1. Remove shoring and bracing prior to backfilling.
  2. Place backfill in maximum uniform layers of 9"; in confined areas use 6" lifts. Do not allow levels of fill against concrete walls to differ by more than two feet on either side of walls unless walls are adequately braced or all floor framing is in place, up to and including grade level slabs.
- C. Bring backfill to sub-grade elevations. Slope backfill at exterior of building to drain water away from building.

### 3.13 SUBSURFACE OBSTRUCTIONS-UTILITIES

- A. All pipes, conduits, etc. whose centerline lies at an angle of 20 degrees or greater to the centerline of the utility being installed shall be considered as crossing obstructions and shall be protected, or repaired or replaced if damaged, or relocated, all at no additional cost to the Owner.
- B. Comply with the crossing requirements indicated in applicable specification sections and as shown on the Drawings.

END OF SECTION 31 23 10

## SECTION 32 13 13 - CONCRETE PAVING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections apply to this Section.

#### 1.2 SUMMARY

- A. This section includes the following:
  - 1. Walks
  - 2. Paver base slab.
- B. Related Sections:
  - 1. Division 32 Section "Earthwork" for subgrade preparation, grading and subbase courses.

#### 1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, expansive hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume.

#### 1.4 SUBMITTALS

- A. Product Data: For each type of manufactured material and product specified.
- B. Design Mixes: For each concrete mix, include alternate mix designs when characteristics of materials, project conditions, weather, test results or other circumstances warrant adjustments.
- C. Material Certificates: Signed by manufacturers certifying that each of the following materials complies with requirements.
  - 1. Cementitious materials and aggregates
  - 2. Steel reinforcement and reinforcement accessories
  - 3. Polypropylene microfiber reinforcement
  - 4. Admixtures
  - 5. Curing compounds
  - 6. Bonding agent or adhesive
  - 7. Joint fillers
  - 8. Saltguard treatment

#### 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer who has completed pavement work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performances.
- B. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94b requirements for production and equipment.
- C. Source Limitations: Obtain each type of class of cementitious material of the same brand from the same manufacturer's plant and each aggregate from one source.
- D. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
  - 1. Build mockups of full-thickness sections of concrete paving to demonstrate typical joints; surface finish, texture, and color; curing; and standard of workmanship.
  - 2. Build mockups of concrete paving in the location and of the size indicated or, if not indicated, build mockups where directed by Architect and not less than 96 inches by 96 inches.
  - 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
  - 4. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

#### 1.6 PROJECT CONDITIONS

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

### PART 2 - PRODUCTS

#### 2.1 FORMS

- A. Form Materials: Plywood, metal, metal framed plywood, or other approved panel type materials to provide full depth, continuous, straight, smooth exposed surfaces.
  - 1. Use flexible or curved forms for curves of a radius 100 feet or less.
- B. Form Release Agent: Commercially formulated form-release agent that will not bond with, stain or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

#### 2.2 STEEL REINFORCEMENT

- A. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
- B. Deformed-Steel Welded Wire Reinforcement: ASTM A 497/A 497M, flat sheet.
- C. Epoxy-Coated Welded Wire Reinforcement: ASTM A 884/A 884M, Class A, plain steel.

- D. Plain-Steel Wire: ASTM A 82/A 82M, galvanized.
- E. Deformed-Steel Wire: ASTM A 496/A 496M.
- F. Epoxy-Coated-Steel Wire: ASTM A 884/A 884M, Class A coated, deformed.
- G. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 (Grade 420) plain-steel bars; zinc coated galvanized after fabrication according to ASTM A 767/A 767M, Class I coating. Cut bars true to length with ends square and free of burrs.
- H. Epoxy-Coated, Joint Dowel Bars: ASTM A 775/A 775M; with ASTM A 615/A 615M, Grade 60 (Grade 420), plain-steel bars.
- I. Tie Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.
- J. Hook Bolts: ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6), internally and externally threaded. Design hook-bolt joint assembly to hold coupling against paving form and in position during concreting operations, and to permit removal without damage to concrete or hook bolt.
- K. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:
  - 1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.
  - 2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.
- L. Epoxy Repair Coating: Liquid, two-part, epoxy repair coating, compatible with epoxy coating on reinforcement.
- M. Zinc Repair Material: ASTM A 780.

## 2.3 REINFORCEMENT

- N. Synthetic Fiber: Monofilament polypropylene fibers engineered and designed for use in concrete paving, complying with ASTM C 1116/C 1116M, Type III, 1/2 to 1-1/2 inches long.
  - 1. Products: Subject to compliance with requirements, provide one of the following:
    - a. Monofilament Fibers:
      - 1) Axim Italcementi Group, Inc.; FIBRASOL II P.
      - 2) Euclid Chemical Company (The), an RPM company; Fiberstrand 100, Fiberstrand 150.
      - 3) FORTA Corporation; FORTA ECONO-MONO or FORTA Mighty-Mono.
      - 4) Grace, W. R. & Co. - Conn.; Grace MicroFiber.
      - 5) Metalcrete Industries; Polystrand 1000.
      - 6) QC Construction Products; QC FIBERS.

## 2.3 CONCRETE MATERIALS

- A. Water: ASTM C 94

## 2.4 ADMIXTURES

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

## 2.5 CURING MATERIALS

- A. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- B. Water: Potable.

## 2.6 RELATED MATERIALS

- A. Expansion and Isolation Joint Filler Strips: ASTM D 1752, cork or self expanding cork.
- B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- C. Salt Guard/Water Repellent and Protection: Consolideck Saltguard WB – deep penetrating water and salt barrier for concrete.

## 2.7 CONCRETE MIXES

- A. Prepare design mixes. Proportioned according to ACI 211.1 and ACI 301, for each type and strength of normal-weight concrete determined by either laboratory trial mixes or field experience.
- B. Proportion mixes to provide concrete with the following properties:
  - 1. Compressive Strength (28 Days): 4500 psi
  - 2. Maximum Water-Cementitious Material Ratio: 0.50
  - 3. Slump Limit: 3 inches
- C. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content as follows within a tolerance of plus or minus 1.5 percent:

1. Air Content: 6.0 percent for 1-inch maximum aggregate.

## 2.8 CONCRETE MIXING

- A. Ready-Mixed Concrete: Comply with requirements and with ASTM C 94 and ASTM C 1116:

1. When air temperature is between 85 deg F and 90 deg F, reduce mixing and delivery time from 1 ½ hours to 75 minutes; when air temperature is above 90 deg F reduce mixing time and delivery time to 60 minutes.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Proof roll prepared subbase to check for unstable and verify need for additional compaction. Proceed with pavement only after nonconforming conditions have been corrected and subgrade is ready to receive pavement.
- B. Remove loose material from compacted subbase surface immediately before placing concrete.

### 3.2 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set brace and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement
- B. Clean forms after each use and coat with form release agent to ensure separation from concrete without damage.

### 3.3 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.
- D. Install welded wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.
- E. Zinc-Coated Reinforcement: Use galvanized-steel wire ties to fasten zinc-coated reinforcement. Repair cut and damaged zinc coatings with zinc repair material.
- F. Epoxy-Coated Reinforcement: Use epoxy-coated steel wire ties to fasten epoxy-coated reinforcement. Repair cut and damaged epoxy coatings with epoxy repair coating according to ASTM D 3963/D 3963M.



- G. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities, or replace units as required before placement. Set mats for a minimum 2-inch (50-mm) overlap of adjacent mats.

### 3.3 JOINTS

- A. General: Construct construction, isolation and contraction joints and tool edging true to line with faces perpendicular to surface plane of concrete. Construct traverse joints at right angles to centerline, unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour, unless pavement terminates at isolation joints.
  - 1. Continue reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of pavement strips unless otherwise indicated.
  - 2. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.
  - 1. Locate expansion joints at intervals of 20 feet, unless otherwise indicated.
  - 2. Extend joint fillers full width and depth of joint.
  - 3. Terminate joint filler less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
  - 4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
  - 5. Furnish joint fillers in one-piece lengths. Where more than one length is required lace or clip joint-filler sections together.
  - 6. Protect top edge of joint filler during concrete placement with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows:
  - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a radius as noted on the Drawings. Repeat grooving of contraction joints after applying surface finishes. Eliminate grooving-tool marks on concrete surfaces.
    - 1. Tolerance: Ensure that grooved joints are within 3 inches either way from centers of dowels.
  - 2. Doweled Contraction Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

- E. Edging: Tool edges of pavement, gutters, curbs and joints in concrete after initial floating with an edging tool to the following radius. Eliminate edging-tool marks on concrete surfaces.
  - 1. Radius: 1/4 inch (6 mm).
  - 2. Tool Joint: see walk detail.

### 3.4 CONCRETE PLACEMENT

- A. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcement steel and items to be embedded or cast in. Notify other trades to permit installation of their work.
- B. Remove snow ice, or frost from subbase surface and reinforcement before placing concrete. Do not place concrete on frozen surfaces.
- C. Moisten subbase to provide a uniform dampened condition at the time concrete is placed. Do not place concrete around manholes or other structures until they are at the required finish elevation and alignment.
- D. Comply with requirements and with recommendations in ACI 304R for measuring, mixing, transporting, and placing concrete.
- E. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- F. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping. Use equipment and procedures to consolidate concrete according to recommendations in ACI 309R.
  - 1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.
- G. Screed pavement surfaces with a straightedge and strike off. Commence initial floating using bull floats or darbies to form an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations.
- H. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
  - 1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F (27 deg C) at point of placement.
  - 2. Do not use frozen materials or materials containing ice or snow.
  - 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or

chemical accelerators, unless otherwise specified and approved in mix designs.

- I. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R and as follows, when hot-weather conditions exist.
  1. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 deg F. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
  2. Fog-spray forms and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

### 3.5 CONCRETE FINISHING

- A. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and the concrete surface has stiffened to permit operations. Float surface with power driven floats, or by hand floating is area is small or inaccessible to power units. Float surface to true planes. Cut down high spots, and fill low spots. Refloat surface immediately to uniform granular texture.
  1. Surface Finish: Medium Broom Finish
- B. Final Tooling: Tool edges and joints of paving and curbs, and joints formed in fresh concrete with jointing tool as detailed and with the following radius. Repeat tooling of edges and joints after applying surface finish.
  1. Radius: ¼ inch
  2. Tool Joint: See walk detail.

### 3.6 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold weather protection and follow recommendations in ACI 305R for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- D. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, or a combination of these as follows:
  1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

- a. Water.
  - b. Continuous water-fog spray.
  - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.
2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
- E. Prepare paving and install Saltguard WB per manufacturer's instructions.
1. Thoroughly clean the surface using the appropriate Consolideck®, Sure Klean® or Enviro Klean® product. Remove any curing compound or previous sealer. Contaminants on the surface, including curing compounds and previous sealers, may interfere with Saltguard® WB's ability to penetrate the surface.
  2. Though Saltguard® WB may be applied to slightly damp surfaces, best performance is achieved on clean, visibly dry and absorbent surfaces. Excessive moisture inhibits penetration and reduces the service life and performance of the treatment. Clean newly constructed and repointed surfaces before application. Saltguard® WB won't impair adhesion of most sealing and caulking compounds. Always test for compatibility.
  3. Application Instructions: Horizontal
    - a. Apply in a single saturating coat. Use enough to keep the surface wet for 2–3 minutes before penetrating. Do not over apply.
    - b. Broom out all puddles thoroughly until they penetrate the surface. Wipe up all excess material.

### 3.7 PAVEMENT TOLERANCES

- A. Comply with tolerances of ACI 117 and as follows:

1. Elevation: 1/16 inch
2. Thickness: Plus 3/8 inch, minus ¼ inch
3. Contraction Joint Depth: Plus ¼ inch, no minus
4. Joint Width: Plus 1/8 inch, no minus

### 3.8 REPAIRS AND PROTECTION

- A. Remove and replace concrete pavement that is broken, damaged, or defective, or does not meet requirements in this Section.
- B. Drill test cores where directed by Architect when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with portland cement concrete bonded to pavement with epoxy adhesive.
- E. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after

placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.

- F. Contractor shall provide surveillance for all poured-in-place concrete pavements until concrete has set firmly to prevent unwarranted markings of the concrete surface. Unauthorized marking or graffiti in the finished surfaces shall be cause for rejection, and replacement by the Contractor at no additional cost.
- E. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION

## SECTION 32 13 73 – CONCRETE PAVING JOINT SEALANTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Expansion and contraction joints within cement concrete pavement.
  - 2. Joints between cement concrete and asphalt pavement.
- B. Related Sections include the following:
  - 1. Division 32 Section "Concrete Paving" for constructing joints in concrete pavement.
- C. Alternates: Refer to Division 01 Section "Alternates" for description of Work of this Section affected by alternates.

#### 1.3 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Verification: For each type and color of joint sealant required. Install joint-sealant samples in 1/2-inch- (13-mm-) wide joints formed between two 6-inch- (150-mm-) long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- C. Product Certificates: For each type of joint sealant and accessory, signed by product manufacturer.
- D. Qualification Data: For Installer and testing agency.
- E. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for sealants.

#### 1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by manufacturer.
- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

- C. Product Testing: Obtain test results for "Product Test Reports" Paragraph in "Submittals" Article from a qualified testing agency based on testing of current sealant products prior to commencement of the Work.
  - 1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 for testing indicated, as documented according to ASTM E 548.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multicomponent materials.
- B. Store and handle materials to comply with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

#### 1.6 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
  - 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer.
  - 2. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 4.4 deg C.
  - 3. When joint substrates are wet or covered with frost.
  - 4. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
  - 5. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.

#### 2.2 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

### 2.3 COLD-APPLIED JOINT SEALANTS

- A. General: Pavement sealants shall be a polyurethane based complying with ASTM C-920, Type S (single component), or Type M (multicomponent), Use group T (traffic) or NT (non-traffic), Class 35 (minimum) and the following. Any sealants used shall be recommended for the specific use by the manufacturer. Sealant and backer-rod materials shall be compatible as noted by the manufacturers submitted.
1. Horizontal joints in areas of vehicular traffic shall comply with: ASTM C-920, Grade P (pourable or self-leveling) Use T. Color Grey.
  2. Horizontal joints in areas of pedestrian, or light vehicular traffic shall comply with ASTM C-920, Grade NS (non-sag), use T or NT. Submitted product shall be available in a minimum of 7 standard colors.
  3. Vertical Joints: Shall comply with ASTM C-920, Grade NS (non-sag), use T or NT. Submitted product shall be available in a minimum of 7 standard colors.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. BASF.
  2. Bostik.
  3. Pecora.
  4. Sika.
  5. Tremco.
  6. W. R. Meadows.

### 2.4 JOINT-SEALANT BACKER MATERIALS

- A. General: Provide joint-sealant backer materials that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by joint-sealant manufacturer based on field experience and laboratory testing.
- B. Round Backer Rods for Cold-Applied Sealants: ASTM D 5249, Type 3, of diameter and density required to control sealant depth and prevent bottom-side adhesion of sealant.

### 2.5 PRIMERS

- A. Primers: Product recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
1. Proceed with installation only after unsatisfactory conditions have been corrected.



### 3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.
- B. Joint Priming: Prime joint substrates where indicated or where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

### 3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install backer materials of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
  - 1. Do not leave gaps between ends of backer materials.
  - 2. Do not stretch, twist, puncture, or tear backer materials.
  - 3. Remove absorbent backer materials that have become wet before sealant application and replace them with dry materials.
- D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
  - 1. Place sealants so they directly contact and fully wet joint substrates.
  - 2. Completely fill recesses provided for each joint configuration.
  - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
  - 1. Remove excess sealants from surfaces adjacent to joint.
  - 2. Use tooling agents that are approved in writing by joint-sealant manufacturer and that do not discolor sealants or adjacent surfaces.
- F. Provide joint configuration to comply with joint-sealant manufacturer's written instructions, unless otherwise indicated.
- G. Provide recessed joint configuration for sealants in areas of vehicular traffic per manufacturers recommended recess depth and at locations indicated.

### 3.4 CLEANING

- A. Clean off excess sealants or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.

### 3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately and replace with joint sealant so installations with repaired areas are indistinguishable from the original work.

END OF SECTION 32 13 73

## SECTION 32 14 00 - UNIT PAVING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Brick pavers set in aggregate setting bed.
- 2. Concrete pavers set in aggregate setting bed.
- 3. Cast-in-place concrete edge restraints.

- B. Related Requirements:

- 1. Section 321313 "Concrete Paving" for concrete base under unit pavers and for cast-in-place concrete curbs serving as edge restraints for unit pavers.

#### 1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For materials other than water and aggregates.

- B. Product Data: For the following:

- 1. Pavers.

- C. Sieve Analyses: For aggregate setting-bed materials, according to ASTM C 136.

- D. Samples for Initial Selection: For each type of unit paver indicated and the following:

- 1. Joint materials involving color selection.

- E. Samples for Verification: For full-size units of each type of unit paver indicated. Include Samples of the following:

- 1. Joint materials.

1.5 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For unit pavers. Include statements of material properties indicating compliance with requirements, including compliance with standards. Provide for each type and size of unit.
- B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for unit pavers, indicating compliance with requirements.
  - 1. For solid interlocking paving units, include test data for freezing and thawing according to ASTM C 67.

1.6 QUALITY ASSURANCE

- A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
  - 1. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store pavers on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Store liquids in tightly closed containers protected from freezing.
- E. Store asphalt cement and other bituminous materials in tightly closed containers.

1.8 FIELD CONDITIONS

- A. Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Source Limitations: Obtain each type of unit paver, joint material, and setting material from single source with resources to provide materials and products of consistent quality in appearance and physical properties.

### 2.2 BRICK PAVERS (BASE BID)

- A. Brick Pavers: Light-traffic paving brick; ASTM C 902, Class SX, Type I, Application PS. Provide brick without frogs or cores in surfaces exposed to view in the completed Work.
1. Basis of Design Product: The design for brick pavers is based on Whitacre Greer. Pavers shall have a factory applied product equal to Prosooco's Salt guard WB. Subject to compliance with requirements, provide the named product of a comparable product, as approved by the landscape architect.
  2. Field Pavers:
    - a. Style: Bevel & Lug Paver
    - b. Thickness: 2-1/4 inches (57 mm)
    - c. Face size and Shape: 4 by 8 inches (102 by 203 mm) rectangular
    - d. Color: Random color of two (2) Whitacre Greer standard colors. Mixture percentage to be approximately as follows:
      - 1) Color #1: 32 Antique at 85 percent coverage
      - 2) Color #2: 52 Majestic at 15 percent coverage
    - e. Pattern: Herringbone.
  3. Accent Border Pavers
    - a. Style: Bevel & Lug Paver
    - b. Thickness: 2-1/4 inches (57 mm)
    - c. Face size and Shape: 4 by 8 inches (102 by 203 mm) rectangular
    - d. Color: 36 Red Sunset
    - e. Pattern: As shown on drawings
- B. Efflorescence: Brick shall be rated "not effloresced" when tested according to ASTM C 67.
- C. Temporary Protective Coating: Precoat exposed surfaces of brick pavers with a continuous film of a temporary protective coating that is compatible with brick, mortar, and grout products and can be removed without damaging grout or brick. Do not coat unexposed brick surfaces; handle brick to prevent coated surfaces from contacting backs or edges of other units. If, despite these precautions, coating does contact bonding surfaces of brick, remove coating from bonding surfaces before setting brick.

### 2.3 CONCRETE PAVERS (ALTERNATE)

- A. Concrete Pavers: Light-traffic unit paver; ASTM C936-82, 8,000 psi min, maximum 5% absorption or less at 50 cycles of freeze thaw testing per section ASTM C67. Provide pavers without frogs or cores in surfaces exposed to view in the completed Work.
1. Basis of Design Product: The design for brick pavers is based on Hanover Pavers with beveled edges and spacers on all four sides. Pavers shall have a factory applied product equal to Prosoco's Salt guard WB. Subject to compliance with requirements, provide the named product of a comparable product, as approved by the landscape architect.
  2. Field Pavers:
    - a. Style: Traditional Prest Brick
    - b. Thickness: 2-1/4 inches (57 mm)
    - c. Face size and Shape: 4 by 8 inches (102 by 203 mm) rectangular
    - d. Color: Random color of two (2) Whitacre Greer standard colors. Mixture percentage to be approximately as follows:
      - 1) Color #1: Color shall match Whitacre Greer brick paver color 32 Antique at 85 percent coverage
      - 2) Color #2: Color shall match Whitacre Greer brick paver color 52 Majestic at 15 percent coverage
    - e. Finish: Natural
    - f. Pattern: Herringbone.
  3. Accent Border Pavers
    - a. Style: Traditional Prest Brick
    - b. Thickness: 2-1/4 inches (57 mm)
    - c. Face size and Shape: 4 by 8 inches (102 by 203 mm) rectangular
    - d. Color: Color shall match Whitacre Greer brick paver color 36 Red Sunset
    - e. Finish: Natural
    - f. Pattern: As shown on drawings
- B. Efflorescence: Brick shall be rated "not effloresced" when tested according to ASTM C 67.
- C. Temporary Protective Coating: Precoat exposed surfaces of brick pavers with a continuous film of a temporary protective coating that is compatible with brick, mortar, and grout products and can be removed without damaging grout or brick. Do not coat unexposed brick surfaces; handle brick to prevent coated surfaces from contacting backs or edges of other units. If, despite these precautions, coating does contact bonding surfaces of brick, remove coating from bonding surfaces before setting brick.

### 2.4 CURBS AND EDGE RESTRAINTS

- A. Job-Built Concrete Edge Restraints: Comply with requirements in Section 033000 "Cast-in-Place Concrete" for normal-weight, air-entrained, ready-mixed concrete with minimum 28-day compressive strength of 3000 psi (20 MPa).

2.5 ACCESSORIES

- A. Cork Joint Filler: Preformed strips complying with ASTM D 1752, Type II.
- B. Compressible Foam Filler: Preformed strips complying with ASTM D 1056, Grade 2A1.

2.6 AGGREGATE SETTING-BED MATERIALS

- A. Graded Aggregate for Subbase: Sound, crushed stone or gravel complying with [ASTM D 448 for Size No. 57] [ASTM D 2940/D 2940M, subbase material] [requirements in Section 312000 "Earth Moving" for subbase material].
- B. Graded Aggregate for Base: Sound, crushed stone or gravel complying with [ASTM D 448 for Size No. 8] [ASTM D 2940/D 2940M, base material] [requirements in Section 312000 "Earth Moving" for base course].
- C. Sand for Leveling Course: Sound, sharp, washed, natural sand or crushed stone complying with gradation requirements in ASTM C 33/C 33M for fine aggregate.
- D. Stone Screenings for Leveling Course: Sound stone screenings complying with ASTM D 448 for Size No. 10.
- E. Sand for Joints: Polymeric sand intended for intended joint size. Retain subparagraph below if a particular color is required.
  - 1. Provide sand of color needed to produce required joint color.
- F. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications; made from polyolefins or polyesters, with elongation less than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
  - 1. Survivability: Class 2, AASHTO M 288.
  - 2. Apparent Opening Size: No. 60 (0.250-mm) sieve, maximum; ASTM D 4751.
  - 3. Permittivity: 0.02 per second, minimum; ASTM D 4491.
  - 4. UV Stability: 50 percent after 500 hours' exposure, ASTM D 4355.
- G. Drainage Geotextile: Nonwoven needle-punched geotextile fabric, manufactured for subsurface drainage applications, made from polyolefins or polyesters; with elongation greater than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
  - 1. Survivability: Class 2, AASHTO M 288.
  - 2. Apparent Opening Size: No. 40 (0.425-mm) sieve, maximum; ASTM D 4751.
  - 3. Permittivity: 0.5 per second, minimum; ASTM D 4491.
  - 4. UV Stability: 50 percent after 500 hours' exposure, ASTM D 4355.
- H. Herbicide: Commercial chemical for weed control, registered with the EPA. Provide in granular, liquid, or wettable powder form.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine surfaces indicated to receive unit paving, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.
- B. Where unit paving is to be installed over waterproofing, examine waterproofing installation, with waterproofing Installer present, for protection from paving operations, including areas where waterproofing system is turned up or flashed against vertical surfaces.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 PREPARATION

- A. Remove substances from concrete substrates that could impair mortar bond, including curing and sealing compounds, form oil, and laitance.
- B. Sweep concrete substrates to remove dirt, dust, debris, and loose particles.
- C. Proof-roll prepared subgrade according to requirements in Section 312000 "Earth Moving" to identify soft pockets and areas of excess yielding. Proceed with unit paver installation only after deficient subgrades have been corrected and are ready to receive base course for unit pavers.

#### 3.3 INSTALLATION, GENERAL

- A. Do not use unit pavers with chips, cracks, voids, discolorations, or other defects that might be visible or cause staining in finished work.
- B. Mix pavers from several pallets or cubes, as they are placed, to produce uniform blend of colors and textures.
- C. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.
- D. Handle protective-coated brick pavers to prevent coated surfaces from contacting backs or edges of other units. If, despite these precautions, coating does contact bonding surfaces of brick, remove coating from bonding surfaces before setting brick.
- E. Joint Pattern: As indicated.
- F. Tolerances: Do not exceed 1/32-inch (0.8-mm) unit-to-unit offset from flush (lippage) nor 1/8 inch in 10 feet (3 mm in 3 m) from level, or indicated slope, for finished surface of paving.
- G. Tolerances: Do not exceed[ 1/16-inch (1.6-mm) unit-to-unit offset from flush (lippage) nor 1/8 inch in 24 inches (3 mm in 600 mm) and] 1/4 inch in 10 feet (6 mm in 3 m) from level, or indicated slope, for finished surface of paving.



- H. Expansion and Control Joints: Provide for sealant-filled joints at locations and of widths indicated. Provide compressible foam filler as backing for sealant-filled joints. Install joint filler before setting pavers. Sealant materials and installation are specified in Section 079200 "Joint Sealants."
- I. Expansion and Control Joints: Provide cork joint filler at locations and of widths indicated. Install joint filler before setting pavers. Make top of joint filler flush with top of pavers.
- J. Provide edge restraints as indicated. Install edge restraints before placing unit pavers.
  - 1. Install edge restraints to comply with manufacturer's written instructions. Install stakes at intervals required to hold edge restraints in place during and after unit paver installation.
  - 2. For metal edge restraints with top edge exposed, drive stakes at least 1 inch (25 mm) below top edge.
  - 3. Install job-built concrete edge restraints to comply with requirements in Section 033000 "Cast-in-Place Concrete."
  - 4. Where pavers set in mortar bed are indicated as edge restraints for pavers set in aggregate setting bed, install pavers set in mortar and allow mortar to cure before placing aggregate setting bed and remainder of pavers. Cut off mortar bed at a steep angle so it will not interfere with aggregate setting bed.
  - 5. Where pavers embedded in concrete are indicated as edge restraints for pavers set in aggregate setting bed, install pavers embedded in concrete and allow concrete to cure before placing aggregate setting bed and remainder of pavers. Hold top of concrete below aggregate setting bed.
- K. Provide steps made of pavers as indicated. Install paver steps before installing adjacent pavers.
  - 1. Where pavers set in mortar bed are indicated for steps constructed adjacent to pavers set in aggregate setting bed, install steps and allow mortar to cure before placing aggregate setting bed and remainder of pavers. Cut off mortar bed at a steep angle so it will not interfere with aggregate setting bed.

#### 3.4 AGGREGATE SETTING-BED APPLICATIONS

- A. Compact soil subgrade uniformly to at least 95 percent of ASTM D 698 laboratory density.
- B. Proof-roll prepared subgrade to identify soft pockets and areas of excess yielding. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.
- C. Place separation geotextile over prepared subgrade, overlapping ends and edges at least 12 inches (300 mm).
- D. Place aggregate[ subbase and] base, compact by tamping with plate vibrator, and screed to depth indicated.
- E. Place aggregate[ subbase and] base, compact to 100 percent of ASTM D 1557 maximum laboratory density, and screed to depth indicated.

- F. Place drainage geotextile over compacted base course, overlapping ends and edges at least 12 inches (300 mm).
- G. Place leveling course and screed to a thickness of 1 to 1-1/2 inches (25 to 38 mm), taking care that moisture content remains constant and density is loose and uniform until pavers are set and compacted.
- H. Treat leveling course with herbicide to inhibit growth of grass and weeds.
- I. Set pavers with a minimum joint width of 1/16 inch (1.5 mm) and a maximum of 1/8 inch (3 mm), being careful not to disturb leveling base. If pavers have spacer bars, place pavers hand tight against spacer bars. Use string lines to keep straight lines. Fill gaps between units that exceed 3/8 inch (10 mm) with pieces cut to fit from full-size unit pavers.
  - 1. When installation is performed with mechanical equipment, use only unit pavers with spacer bars on sides of each unit.
- J. Vibrate pavers into leveling course with a low-amplitude plate vibrator capable of a 3500- to 5000-lbf (16- to 22-kN) compaction force at 80 to 90 Hz. Use vibrator with neoprene mat on face of plate or other means as needed to prevent cracking and chipping of pavers. Perform at least three passes across paving with vibrator.
  - 1. Compact pavers when there is sufficient surface to accommodate operation of vibrator, leaving at least 36 inches (900 mm) of uncompacted pavers adjacent to temporary edges.
  - 2. Before ending each day's work, compact installed concrete pavers except for 36-inch (900-mm) width of uncompacted pavers adjacent to temporary edges (laying faces).
  - 3. As work progresses to perimeter of installation, compact installed pavers that are adjacent to permanent edges unless they are within 36 inches (90 mm) of laying face.
  - 4. Before ending each day's work and when rain interrupts work, cover pavers that have not been compacted and cover leveling course on which pavers have not been placed with nonstaining plastic sheets to protect them from rain.
- K. Spread dry sand and fill joints immediately after vibrating pavers into leveling course. Vibrate pavers and add sand until joints are completely filled, then complete installation per manufactures instructions.
- L. Do not allow traffic on installed pavers until sand has been vibrated into joints.
- M. Repeat joint-filling process 30 days later.

### 3.5 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace unit pavers that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment and with no evidence of replacement.
- B. Pointing: During tooling of joints, enlarge voids or holes and completely fill with grout. Point joints at sealant joints to provide a neat, uniform appearance, properly prepared for sealant application.

- C. Cleaning: Remove excess grout from exposed paver surfaces; wash and scrub clean.
  - 1. Remove temporary protective coating as recommended by coating manufacturer and as acceptable to paver and grout manufacturers.
  - 2. Do not allow protective coating to enter floor drains. Trap, collect, and remove coating material.

END OF SECTION 32 14 00

SECTION 32 91 19 - LANDSCAPE GRADING

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. The work includes furnishing all labor, materials, equipment, and supervision to complete the site grading work in accordance with the Drawings and Specifications.
- B. Related Work: The following items are not included in this Section and are specified under the designated Sections:
  - 1. Division 01, GENERAL REQUIREMENTS; Topsoil and other planting materials testing.
  - 2. Section 312000, EARTHWORK; Excavation, backfill compaction and establishment of subgrade elevations.
  - 3. Section 329200, LAWNS AND GRASSES.
  - 4. Section 329300, TREES, PLANTS AND GROUND COVERS.

1.3 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. American Society for Testing and Materials (ASTM):

D 1556	Density of Soil in Place by the Sand-Cone Method
D 2167	Density and Unit Weight of Soil In Place by the Rubber- Balloon Method

1.4 EXISTING CONDITIONS

- A. By submitting a bid, the Contractor affirms that he has carefully examined the site and all conditions affecting work under this Section. No claim for additional costs will be allowed because of lack of full knowledge of existing conditions.

## 1.5 QUALITY CONTROL

- A. The Architect reserves the right to perform on-site observation during the grading operations. The observations may include, but not be limited to the following:
  - 1. Observation of subgrade preparation for slab-on-grade and paved areas.
  - 2. Observation of rough and finish grading operations.
- B. Contractor shall set grade string lines for Architect's review and approval. All grade breaks shall be staked with grade stakes at each end, any change of direction, and at 20' centers along the length for Architect's review during grading operations.
- C. Perform field density tests in accordance with ASTM D 1556 or ASTM D 2167.
  - 1. Make at least one field density test of the subgrade for every 2000 sq. ft. of paved area, but in no case less than three tests.
  - 2. In each compacted fill layer, make one field density test for every 2000 sq. ft. of overlying paved area, but in no case less than three tests.
  - 3. Make at least one field density test of the planting soil for every 2000 sq. ft. of plant bed area, but in no case less than three tests.
  - 4. Make at least one field density test of the planting soil for every 2000 sq. ft. of lawn area, but in no case less than three tests.
- D. If, in the opinion of the Architect, based on reports of the testing service and inspection, the subgrade or fills which have been placed are below the specified density, additional compaction and testing will be required until satisfactory results are obtained.
  - 1. The results of density tests of soil-in-place will be considered satisfactory if the average of any four consecutive density tests which may be selected are in each instance equal to or greater than the specified density, and if not more than one density test out of five has a value more than 2% below the required density.
- E. The Architect's presence does not include supervision or direction of the actual work by the Contractor, his employees, or agents. Neither the presence of the Architect, nor any observations and testing performed by him shall excuse the Contractor from defects discovered in his work.

## 1.6 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- A. The work shall be executed in such manner as to prevent any damage to adjacent property and any other property and existing improvements such as, but not limited to: streets, curbs, paving, utility lines and structures, monuments, bench marks and other public and private property.
- B. In case of any damage or injury caused in the performance of the grading work, the Contractor shall, at his own expense, make good such damage or injury to the satisfaction of, and without cost to the Owner. Existing roads, sidewalks, and curbs damaged during

the grading work shall be repaired or replaced to their original condition at the completion of operations. The Contractor shall replace, at his own cost, existing bench marks, monuments, and other reference points which are disturbed or destroyed.

#### 1.7 COORDINATION

- A. Prior to start of grading operations, the Contractor shall arrange an on-site meeting with the Architect for the purpose of establishing Contractor's schedule of operations and scheduling inspection procedures and requirements.
- B. As construction proceeds, the Contractor shall be responsible for notifying the Architect prior to start of grading operations requiring inspection and/or testing.
- C. The Contractor shall be responsible for obtaining test samples of soil materials proposed to be used and transporting them to the site sufficiently in advance of time planned for use of these materials for testing of materials to be completed. Use of these proposed materials by the Contractor prior to testing and approval or rejection, shall be at the Contractor's risk.

### PART 2 - PRODUCTS

#### 2.1 SOURCE OF MATERIALS

- A. Material shall be obtained from required on-site excavation, to the extent that suitable material is available, and from off-site sources, to the extent that suitable material is not available from on-site excavation. Refer to Section 312000, EARTHWORK for fill materials, and Section 329200, LAWNS AND GRASSES and Section 329300, TREES, PLANTS AND GROUND COVERS for Planting Soil.

### PART 3 - EXECUTION

#### 3.1 COMPACTION

- A. Refer to Section 312000, EARTHWORK for required levels of subgrade compaction at paved areas.
  - 1. Unless otherwise indicated, scarified subgrade in landscape areas shall be compacted to 86% - 88% compaction ASTM D698 Standard Proctor.
  - 2. Planting Soil – Planting Pits and Beds: shall be spread in lifts not greater than twelve inches and compacted to a density between 82 and 86 percent Standard Proctor Maximum Dry Density.
  - 3. Planting Soil - Lawn Areas: shall be spread over the area and shall be compressed to a density of 86 to 88% Standard Proctor maximum dry density. No vibratory compaction of the subgrade or the planting medium shall take place. No rubber-tired equipment or heavy equipment except for a small bulldozer shall pass over soils after they have been loosened or planting medium spread.

#### 3.2 GRADING - GENERAL

- A. Uniformly grade areas within the limits of site grading under this section, including adjacent transition areas. Smooth finished surfaces within specified tolerances, and between points where elevations are shown, or between such points and existing grades.
- B. The degree of finish required will be that ordinarily obtainable from either blade-grader or scraper operations.
  - 1. Ditches: Finish ditches to ensure proper flow and drainage. Conduct final rolling operations to produce a hard, uniform, and smooth cross-section.
  - 2. Grade Breaks located on the plans indicate crisp transitions, not blended or rounded edges. These should be clean, sharp, and uniform in line and curve as indicated on the plans

### 3.3 ROUGH GRADING

- A. General: Rough grading shall include the shaping, trimming, rolling and refinishing of all surfaces of the subbase, shoulders, earth embankments and the preparation of grades as shown on the Drawings. The grade of shoulders and sloped areas may be done by machine methods.
- B. Do all cutting, filling and grading to lines and grades indicated on the Drawings. Grade evenly to within the dimensions required for grades shown on the Drawings and specified herein. No stones larger than 4 in. shall be placed in upper 6 in. of fill. Fill shall be left in compacted state at the end of work day and sloped to drain.
  - 1. Architect may make such adjustments in grades and alignments as are found necessary to avoid special conditions encountered.
  - 2. Provide a smooth transition between adjacent existing grades and new grades.
  - 3. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- C. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
  - 1. Lawn or Unpaved Areas: Plus or minus 1 inch (25 mm).
  - 2. Walks and Pavements: Plus or minus 1/2 inch (13 mm).
  - 3. Up to 2 in. in 10 ft. – 0 in. tolerance shall be permitted on slopes provided the slopes are uniform in appearance and without any abrupt changes.
  - 4. Traffic of men and equipment across soil subgrade areas shall be prohibited following excavation to the required lines and grades.

### 3.4 FINE GRADING

- A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
  - 1. Provide a smooth transition between adjacent existing grades and new grades.

2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Finish Grading:

1. Lawn or Unpaved Areas: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch (13 mm) of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.
2. Walks: Shape the surface of areas under walks to line, grade and cross-section, with the finish surface not more than 0.00 ft. above or 0.10 ft. below the required subgrade elevation, compacted as specified, and graded to prevent ponding of water after rains.
3. Pavements: Shape the surface of the areas under pavement to line, grade and cross-section, with the finish surface not more than 1/2 in. above or below the required subgrade elevation, compacted as specified, and graded to prevent ponding of water after rains. Include such operations as plowing, discing, and any moisture or aerating required to provide the optimum moisture content for compaction. Fill low areas resulting from removal of unsatisfactory soil materials, obstructions, and other deleterious materials, using satisfactory soil material. Shape to line, grade, and cross-section as shown on the Drawings.

3.5 MAINTENANCE

- A. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
- B. Repair and re-establish grades in settled, eroded, and rutted areas to the specified tolerances.
- C. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify the surface, re-shape, and compact to the required density prior to further construction.

3.6 DISPOSAL OF EXCESS AND WASTE MATERIALS

- A. Remove waste materials, including excavated material classified as unsatisfactory soil material, trash and debris, and dispose of it legally off the Owner's property.

END OF SECTION 32 91 19



SECTION 32 92 00 - LAWNS AND GRASSES

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Provide all materials and equipment, and do all work required to complete the seeding and sodding of lawns, including furnishing and placing planting soil, as indicated on the Drawings and as specified.
- B. Related Work: The following items are not included in this Section and are specified under the designated Sections:
1. Section 312000, EARTHWORK; Establishment of subgrade elevation.
  2. Section 329119, LANDSCAPE GRADING.
  3. Section 329300, TREES, PLANTS, AND GROUND COVERS; New plantings.

1.3 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. American Society for Testing and Materials (ASTM):

C 136	Sieve Analysis of Fine and Coarse Aggregates
D 422	Particle-Size Analysis of Soils
E 11	Wire-Cloth Sieves for Testing Purposes

1.4 SUBMITTALS

- A. Samples: The following samples shall be submitted:

<u>Material</u>	<u>Quantity (lb.)</u>
Fertilizer	1
Lime	1

Compost	1
Seed, each mix	1
Loam borrow	1

- B. Manufacturer's Product Data: Manufacturer's product data shall be submitted for the following materials:

Fertilizer

- C. Certificates: Labels from the manufacturer's container certifying that the product meets the specified requirements shall be submitted for the following materials:

Commercial fertilizer  
Grass seed  
Ground limestone

#### 1.5 OWNER'S INSPECTION AND TESTING

- A. Work will be subject to inspection at all times by the Architect. The Owner reserves the right to engage an independent testing laboratory in accordance with requirements of Section 014000, **QUALITY REQUIREMENTS** to analyze and test materials used in the construction of the work. Where directed by the Architect, the testing laboratory will make material analyses and will report to the Architect whether materials conform to the requirements of this specification.
1. Cost of tests and material analyses made by the testing laboratory will be borne by the Owner when they indicate compliance with the specification, and by the Contractor when they indicate non-compliance.
  2. Testing equipment will be provided by and tests performed by the testing laboratory. Upon request by the Architect, shall provide such auxiliary personnel and services needed to accomplish the testing work.
  3. Gradation of granular materials shall be determined in accordance with ASTM C 136. Sieves for determining material gradation shall be as described in ASTM E 11.

#### 1.6 CONTRACTOR'S INSPECTION AND TESTING

- A. The Contractor shall engage an independent testing agency, experienced in the testing of agricultural soils and acceptable to the Architect, to perform the topsoil/planting soil tests and analyses specified herein. All costs associated with testing shall be the Contractor's responsibility.
1. Particle size analysis shall include the following gradient of mineral

content: <u>USDA Designation</u>	<u>Size in mm</u>
Gravel	+ 2 mm
Very coarse sand	1-2 mm

Coarse sand	0.5-1 mm
Medium sand	0.25-0.5 mm
Fine sand	0.1-0.25 mm
Very fine sand	0.05-0.1 mm
Silt	0.002-0.05 mm
Clay	< 0.002 mm

2. Chemical analysis shall include the following:
  - a. pH and buffer pH
  - b. percentage of organic content by oven-dried weight
  - c. Nutrient levels by parts per million, including phosphorus, potassium, magnesium, manganese, iron, zinc, and calcium. Nutrient test shall include testing laboratory recommendations for supplemental additions to the soil, if necessary, based on the requirements for ornamental horticultural plants. Recommendations shall include rates at which additives are to be applied.
  - d. Soluble salt by electrical conductivity of a 1:2 soil/water sample.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

##### A. Digging Sod:

1. Sod shall not be dug at the nursery or approved source until ready to transport sod to the site of the work or acceptable storage location.
2. Before stripping, sod shall be mowed at a uniform height of 2 in.
3. Cut sod to specified thickness and to standard width and length desired.

##### B. Transportation of Sod:

1. Sod transported to the Project in open vehicles shall be covered with tarpaulins or other suitable covers securely fastened to the body of the vehicle to prevent injury. Closed vehicles shall be adequately ventilated to prevent overheating of the sod.
2. Evidence of inadequate protection following the digging, carelessness while in transit, or improper handling shall be cause for rejection.
3. Sod shall be kept moist, fresh, and protected at all times. Such protection shall encompass the entire period during which the sod is in transit, being handled, or are in temporary storage.
4. Upon arrival at the temporary storage location or the site of the work, sod material shall be inspected for proper shipping procedures. Should the sod be dried out, the Architect will reject the sod. When sod has been rejected, the Contractor shall at once remove it from the area of the work and replace it with acceptable material.
5. Unless otherwise authorized by the Architect, the Contractor shall notify the Architect at least two working days in advance of the anticipated delivery date of sod material. Certificate of Inspection when required shall accompany each shipment.

##### C. Handling and Storage of Sod:

1. Sod material shall be handled with extreme care to avoid breaking or tearing strips.

2. Sod shall not be stored for longer than 30 hours prior to installation. Sod shall be stored in a compact group and shall be kept moist. Sod shall be prevented from freezing.
  3. Sod that has been damaged by poor handling or improper storage will be rejected by the Architect.
- D. Deliver seed in original sealed containers, labeled with analysis of seed mixture, percentage of pure seed, year of production, net weight, date of packaging, location of packaging, and name of seed grower. Damaged packages will not be accepted.
- E. Seed shall be stored under cool and dry conditions so that the endophytic seed in the mixture is capable of maintaining a high level of endophytes
- F. Deliver fertilizer in sealed waterproof bags, printed with manufacturer's name, weight, and guaranteed analysis.

#### 1.8 PLANTING SEASON

- A. Planting season shall be as follows:

<u>Material</u>	<u>Planting Season</u>	
	<u>Spring</u>	<u>Fall</u>
Seeding and sodding	3/15 to 5/15	8/15 to 10/15

- B. Planting shall only be performed when weather and soil conditions are suitable for planting the material specified in accordance with locally accepted practice.
- C. Planting season may be extended with the written permission of the Architect.

#### 1.9 GUARANTEE

- A. Turf shall be guaranteed for a period of 60 days after the date of Acceptance by the Owner.
1. When the work is accepted in parts, the guarantee periods shall extend from each of the partial Acceptances to the terminal date of the last guarantee period. Thus, all guarantee periods terminate at one time.
- B. Turf shall be healthy, free of pests and disease, and in flourishing condition at the end of the guarantee period.
- C. Replace dead turf and turf not in a vigorous, thriving condition, as determined by the Architect during and at the end of the guarantee period, without cost to the Owner, as soon as weather conditions permit and within the specified planting period.
1. The guarantee of all replacement turf shall extend for an additional 60 day period from the date of their Acceptance after replacement.

1.10 FINAL INSPECTION AND FINAL ACCEPTANCE

A. Acceptance:

1. The Architect will inspect all work for Substantial Completion upon written request of the Contractor. The request shall be received at least ten calendar days before the anticipated date of inspection.
2. Acceptance of material by the Architect will be for general conformance to specified requirements, and shall not relieve the Contractor of responsibility for full conformance to the Contract Documents.
3. Upon completion and reinspection of all repairs or renewals necessary in the judgement of the Architect, the Architect will recommend to the Owner that the work of this Section be accepted.

B. Sod and seed areas will be accepted when in compliance with all the following conditions:

1. Roots are thoroughly knit to the soil;
2. Absence of visible joints (sodded areas);
3. All areas show a uniform stand of specified grass in healthy condition;
4. At least 60 days have elapsed since the completion of work under this Section.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Materials shall be extracted or recovered and manufactured from within 500 miles of project site.

2.2 SEED

- A. Seed mixture: Standard grade seed of the most recent season's crop. Seed shall be dry and free of mold. Seed shall be inoculated with endophytes. Seed mixture shall be as follows:

SEED MIX

<u>Name of Seed</u>	% by Weight <u>in</u>	Minimum %	Minimum %
Certified Julia, Dawn Or Shamrock Kentucky Bluegrass	40	98	99
Shademaster Creeping Red Fescue	40	98	85

Commander Perennial Ryegrass	20	90	80
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2.3 SOD

- A. Certified Turfgrass Sod: Superior sod grown from certified, high quality seed of known origin or from plantings of certified grass seedlings or stolons. It shall be inspected by the certification agency of the state in which it is grown to assure satisfactory genetic identity and purity, overall high quality and freedom from noxious weeds as well as excessive quantities of other crop and weedy plants at time of harvest. All seed or original plant material in mixture must be certified. Turfgrass sod shall meet the published state standards for certification.
1. Sod shall be a mixture of four or five current and improved bluegrass varieties found in the top 25% of the NTEP (National Turfgrass Evaluation Proceedings), with last two tests spanning over 8 years. Mixture shall contain approximately equal proportions of each hybrid component.
- B. Sod shall be nursery grown on cultivated mineral agricultural soils. Sod shall have been mowed regularly and carefully, and otherwise maintained from planting to harvest.
- C. Thickness of Cut: Sod shall be machine cut at a uniform soil thickness of 5/8 in., plus or minus 1/4 in., at the time of cutting. Measurement for thickness shall exclude top growth and thatch.
- D. Strip Size: Individual pieces of sod shall be cut to the supplier's standard width and length. Maximum allowable deviation from standard widths and lengths shall be plus or minus 1/2 in. on width, and plus or minus 5% on length. Broken strips and torn and uneven ends will not be acceptable.
- E. Strength of Sod Strips: Standard size sections of sod shall be strong enough to support their own weight and retain their size and shape if suspended vertically when grasped in the upper 10% of the section.
- F. Moisture Content: Sod shall not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
- G. Time Limitations: Sod shall be harvested, delivered, and transplanted within a 36 hour period unless a suitable preservation method is approved prior to delivery. Sod not transplanted within this period shall be inspected and approved by the Architect prior to its installation.
- H. Thatch: Sod shall be relatively free of thatch. A maximum of 1/2 in. (uncompressed) thatch will be permitted.

- I. Diseases, Nematodes, and Insects: Sod shall be free of diseases, nematodes, and soil-borne insects. State Nursery and Plant Materials Laws require that all sod be inspected and approved for sale. The inspection and approval must be made by the State Agricultural Department, Office of the State Entomologist.
- J. Weeds: Sod shall be free of objectionable grassy and broad leaf weeds. Turfgrass sod shall be considered free of such weeds if less than five such plants are found per 100 sq. ft. of area.
  - 1. Turfgrass sod shall not be acceptable if it contains any of the following weeds: common bermudagrass (wiregrass), quackgrass, johnsongrass, poison ivy, nutsedge, nimblewill, Canada thistle, bindweed, bentgrass, wild garlic, ground ivy, perennial sorrel and brome grass.

2.4 SOD FARM GROWING MEDIUM

- A. Soil in which sod was grown shall be classified as loam or sandy loam (silt loam is not acceptable) and shall conform to the following grain size distribution for material passing the #10 sieve:

<u>U.S. Sieve No.</u>	<u>% Passing by Weight</u>	
	<u>Minimum</u>	<u>Maximum</u>
10	100	---
20	75	100
40	30	85
100	12	45
270	5	25
0.002 mm	1	4

- 1. The maximum retained on the #10 sieve shall be 15% by weight of the total sample.
- 2. Tests shall be by combined hydrometer and wet sieving in compliance with ASTM D422.
- 3. The organic content shall be between 3.0 and 8.0 percent.

2.5 PLANTING SOIL

- A. Existing Topsoil
  - 1. Existing topsoil from on-site source(s) may be used for planting soil, to the extent available, if it meets the requirements of this Section for planting soil, or if approved by the Architect.
- B. Planting Soil
  - 1. Planting soil shall be composed of a natural, fertile, friable soil typical of

cultivated topsoils of the locality, suitable for the germination of seeds and support of vegetative growth, with additives, if required, to achieve particle distribution and organic content specifications. Topsoil shall be taken from a well-drained, arable site, free of subsoil, large stones, earth clods, sticks, stumps, clay lumps, roots, other objectionable, extraneous matter or debris nor contain toxic substances. Planting soil shall have a pH value between 5.5 and 6.5 and organic matter content of 5 to 10% of total dry weight.

2. Planting soil shall have the following mechanical analysis (see paragraph 1.06 for particle sizes):

Approximate Particle Distribution

Gravel	Less than 10%
Coarse to medium sand	55 – 65%
Fine to very fine sand	15 – 25%
Silt	10– 20%
Clay	15 – 20%

3. Minimum planting soil nutrient levels shall be: Nitrogen @ 5% average of organic matter, Phosphorus @ .02 to .05% average of total soil content, Potassium @ 1.2% average of total soil content.
4. The Contractor shall provide the Architect with planting soil test results, as specified in Paragraph 1.06, before the start of planting operations. If planting soil does not fall within the required particle distribution, organic content, or pH range, it shall be adjusted to meet the specifications through the addition of sand, compost, limestone, or aluminum sulfate to bring it within the specified limits.

## 2.6 COMPOST

- A. Compost shall be derived from organic wastes such as food and agricultural residues, animal manures, mixed solid waste and biosolids (treated sewage sludge) that meet all State Environmental Agency requirements. The product shall be well composted, free of viable weed seeds and contain material of a generally humus nature capable of sustaining growth of vegetation, with no materials toxic to plant growth.

1. Compost shall have the following properties:

<u>Parameters</u>	<u>Range</u>
pH	5.5 – 8.0
Moisture Content	35% - 55%
Soluble Salts	□□4.0 mmhos (dS)
C:N ratio	15 – 30:1
Particle Size	< 1”
Organic Matter Content	> 50%
Bulk Density	< 1000 lbs./cubic yard
Foreign Matter	< 1% (dry weight)

2. Compost generator shall also provide minimum available nitrogen and other macro and micro nutrients to determine fertilizer requirements.



3. Compost shall be "AllGro", distributed by AllGro, 4 Liberty Lane West, Hampton, NH 03842; "Agresoil", distributed by Agresource, 100 Main Street, Amesbury, MA 01913; or approved equal.
4. Guidelines for quantity of compost required to achieve suitable soil organic content in soil mixes for ornamental horticultural planting shall be as recommended by the compost manufacturer.

## 2.7 LIMESTONE

- A. Ground limestone shall be an agricultural limestone containing a minimum of 85% total carbonates, by weight. Ground limestone shall be graded within the following limits:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
No. 10	100
No. 20	90
No. 100	60

## 2.8 WATER

- A. Water shall be suitable for irrigation and free from ingredients harmful to seeded or sodded areas. Water shall not be from university sources.

## 2.9 COMMERCIAL FERTILIZER

- A. Starter fertilizer shall be HD Scotts Starter Fertilizer or approved equal.
- B. Fertilizer shall conform to the following:
  1. When applied as a topsoil amendment, fertilizer shall have an analysis that will deliver appropriate amounts of nitrogen, phosphorus, and potassium as required to remedy deficiencies revealed by testing the topsoil.
    - a. 50% of nitrogen shall be derived from natural organic source of ureaform.
    - b. Available phosphorus shall be derived from superphosphate, bone meal, or tankage.
    - c. Potassium shall be derived from muriate of potash containing 60% potash.
- C. Fertilizer shall be delivered in manufacturer's standard container printed with manufacturer's name, material weight, and guaranteed analysis.

## 2.10 SUPERPHOSPHATE

- A. Superphosphate shall be composed of finely ground phosphate rock as commonly used for agricultural purposes, and containing not less than 20% available phosphoric acid. The superphosphate shall be delivered to the site in the original unopened containers, each

bearing the manufacturer's guaranteed analysis. Any superphosphate which becomes caked or otherwise damaged making it unsuitable for use, will be rejected.

#### 2.11 CELLULOSE FIBER MULCH

- A. Cellulose fiber mulch shall be composed of virgin wood, contain a green color additive, be weed free, and non-polluting, containing no germination or growth - inhibiting factors, similar to Hydro Mulch, manufactured by Conwed Corporation, St. Paul, Minnesota 55113.

#### 2.12 WEED CONTROL

- A. Weed control for stockpiled topsoil shall be a non-selective weed killer for control of grassy and broadleaf weeds; weed control shall have short residual, allowing seeding and sodding operations to occur within 7 days of application.
- B. Pre-emergent weed control for spread topsoil shall be a selective weed killer for control of grassy and broadleaf weeds that does not inhibit seed germination.

#### 2.13 TURF PROTECTION

- A. Turf Protection Stake: 32" height, reinforced polymer with 8" long, 3/8" diameter galvanized spike, color green as provided by [www.Standardgolf.com](http://www.Standardgolf.com) model number 37750, or approved equal. Posts are to be placed no more than 8'-0" on center
- B. Turf Protection Rope: 1/4" diameter polypropylene braided rope, color green as provided by [www.Standardgolf.com](http://www.Standardgolf.com) model number 37200, or approved equal.

### PART 3 - EXECUTION

#### 3.1 PREPARATION OF SUBGRADE

- A. Subgrade shall be examined to ensure that rough grading and all other subsurface work in lawn areas and other areas to be seeded or sodded is done prior to start of seeding.
- B. Existing subgrade shall be loosened or scarified to a minimum depth of 3 in. prior to spreading topsoil. Subgrade shall be brought to true and uniform grade, and shall be cleared of stones greater than 3 in., sticks, and other extraneous material.

#### 3.2 SPREADING OF PLANTING SOIL

- A. Planting soil shall not be spread until it is possible to follow immediately or within 24 hours with seeding operations. If topsoil is spread prior to this time it shall be cultivated to loosen soil prior to seeding.
- B. Planting soil shall not be placed when subgrade or topsoil material are frozen, excessively wet, or excessively dry.

- C. Planting soil shall be spread in a uniform layer, to a thickness which will compact to the depth required to bring final lawn and grass surfaces to required elevation. Unless otherwise indicated minimum depth of topsoil for sodded areas shall be 4-6 in. and 6 in. for seeded areas.
  - 1. Place approximately 1/2 the thickness of planting soil mixture required. Work into top of loosened subgrade to create a transition layer and then place remainder of planting soil mixture.
- D. Grade lawn and grass areas to a smooth, even surface with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit fine grading to areas that can be planted in the immediate future. Remove trash, debris, stones larger than 1-1/2 inches (38 mm) in any dimension, and other objects that may interfere with planting or maintenance operations.
- E. Moisten prepared lawn areas before planting when soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- F. Restore prepared areas if eroded or otherwise disturbed after fine grading and before planting.

### 3.3 APPLICATION OF FERTILIZER AND CONDITIONERS

- A. Fertilizer and conditioners shall be applied at the following rates:
  - 1. Compost - as required by test results of topsoil.
  - 2. Limestone - as required by test results of topsoil.
  - 3. Fertilizer - as required by test results of topsoil.
- B. Mixing with planting soil:
  - 1. Fertilizer and conditioners shall be spread over the entire lawn areas at the application rates indicated above.
  - 2. Materials shall be uniformly and thoroughly mixed into the top 4 in. of planting soil by discing, rototilling, or other approved method.

### 3.4 FINISH GRADING

- A. Contractor shall set grade lines for Architect's review and approval.
  - 1. Final surface of topsoil immediately before seeding and sodding shall be within  $\pm$  1/2 in. of required elevation, with no ruts, mounds, ridges, or other faults, and no pockets or low spots in which water can collect. Stones, roots, and other debris greater than 1 in. in any dimension, which are visible at the surface, shall be removed and the resulting holes filled with topsoil, leaving a uniform planar surface.
- B. Finish grade surface with a drag or rake. Round out all breaks in grade, smooth down all

lumps and ridges, fill in all holes and crevices. Rolling with a light roller is acceptable, if the surface is scarified afterward.

1. Lawn: Compaction of topsoil for finish grade shall be 85% to 88%.

C. In the event of settlement, the Contractor shall readjust the work to required finished grade.

### 3.5 SEED APPLICATION

A. Prior to seed being applied the contractor shall apply a pre-emergent weed control.

B. Seed shall be applied in two applications; by mechanical spreader.

C. First Application: Seed shall be broadcast by means of an approved mechanical spreader, to give a uniform application at the following rates:

<u>Seed</u>	<u>Application Rate</u>
	<u>lb./1,000 s.f.</u>
Seed Mixture	4.0

1. Seed shall be applied in two equal applications for uniform coverage; direction of travel of spreader for second pass shall be perpendicular to that of the first pass. Seeding shall not be done when it is raining or snowing, or when wind velocity exceeds 5 mph.

2. Following seeding the area shall be lightly raked to mingle seed with top 1/8 to 1/4 in. of soil. Area shall then be fine graded. Stones and other debris greater than 1 in. in any dimension which are visible on surface shall be removed.

D. Following seeding and raking, entire area shall be rolled with a hand roller having a weight of 60 to 90 lb./ft. of width, and a minimum diameter of 2 ft. Entire area shall then be watered by use of lawn sprinklers, or other approved means. Initial watering shall continue until the equivalent of a 2 in. depth of water has been applied to entire seeded surface, at a rate which will not dislodge the seed. Watering shall be repeated thereafter as frequently as required to prevent drying of the surface, until the grass attains an average height of 1/4 in. Watering methods and apparatus which may cause erosion of the surface shall not be permitted.

E. Install Turf Protection around the entire seeded area to prevent vehicles and pedestrians from entering area.

### 3.6 SODDING

A. Prior to seed being applied the contractor shall apply a pre-emergent weed control.

B. Edges of the sodded areas shall be smooth, and all sodded areas shall conform to the design cross sections and grade. At edges adjacent to curbs, paved areas, etc., top surface of earth in sod shall be 1/2 in. below adjacent hard surface.

- C. Sod shall be placed and all sodding operations completed within 72 hours following stripping from sod source bed.
- D. On slopes steeper than 2 to 1, sod shall be fastened in place with suitable wood pins or other approved methods, spaced at not less than 1 pin per square foot.
- E. Surface of completed sodded area shall be smooth. Sod shall be laid edge-to-edge, with tight-butted, staggered joints. Sod shall be carefully placed to insure that it is neither stretched or overlapped. Immediately after laying sod shall be pressed firmly into contact with sod bed by tamping or rolling, to eliminate air pockets. Following compaction, topsoil shall be used to fill all cracks, and excess soil shall be worked into grass with rakes or other suitable equipment. Sod shall not be smothered with excess fill soil.
- F. Immediately after sodding operations have been completed, entire surface shall be compacted with a cultipacker roller or other approved equipment weighing 100 to 160 lb./ft. of roller.
- G. Completed sod shall immediately be watered sufficiently to uniformly wet the soil to at least 1 in. below the bottom of sod bed.
- H. Install Turf Protection around the entire seeded area to prevent vehicles and pedestrians from entering area.

### 3.7 CONTRACTOR MAINTENANCE

- A. Except as otherwise specified below, maintenance shall include all operations required to produce an established lawn, including but not limited to:
  - Fertilizing
  - Mowing
  - Replanting
  - Watering
  - Weeding
  - Aerating
  - Trimming
- B. Maintenance of seeded areas shall begin upon completion of seeding and shall continue for 60 days after substantial completion, or until mowing as specified below is completed, or until average height of grass is 1-1/2 in., whichever occurs later.
  - 1. Watering
    - a. Week No. 1: Provide all watering necessary to keep seed bed moist at all times. Perform watering daily or as necessary to maintain moist soil to a depth of 4 in.
    - b. Week No. 2 and until acceptance of the building, or until mowing as specified below is completed, or until average height of grass is 1-1/2 in., whichever occurs later: Water as necessary to maintain adequate moisture in the upper 4 in. of soil to promote seed germination.
  - 2. Mowing

- a. Not more than 40% of the grass leaf shall be removed during the first or subsequent mowings.
  - b. Bluegrass and other cool season grasses shall be maintained between 1-1/2 in. and 2-1/2 in.
  - c. All clippings shall be removed.
- C. Maintenance of sodded areas shall begin upon completion of sodding and shall continue for 60 days thereafter, unless sodding is not completed until after September 15, in which case maintenance shall continue until the June 15 following.
1. Watering
    - a. Week No. 1: Provide all watering necessary for rooting of sod. Soil on sod pads shall be kept moist at all times. Perform watering daily or as necessary to maintain moist soil to a depth of 4 in. Watering shall be done during the heat of the day to prevent wilting.
    - b. Week No. 2 and Subsequent Weeks: Water as necessary to maintain adequate moisture in the upper 4 in. of soil to promote deep root growth.
  2. Mowing
    - a. Mowing shall not be attempted until the sod is firmly rooted and securely in place. Not more than 40% of the grass leaf shall be removed during the first or subsequent mowings.
    - b. Bluegrass and other cool season grasses shall be maintained between 1-1/2 in. and 2-1/2 in.
    - c. All clippings shall be removed.
    - d. After 2 mowings, the Contractor shall top dress the sod with an application of fertilizer at the rate of 1 pound of actual nitrogen per 1000 square feet.
- D. After grass has sprouted, seeded areas which fail to show a uniform stand of grass shall be replanted as often as necessary to establish an acceptable stand of grass.
1. Scattered bare spots, shall not exceed 15 sq. in. each.
- E. Weeds and growth other than varieties of grass named in grass seed formula shall be removed. Removal may be accomplished by use of suitable herbicides or by physical removal, in which case top growth and roots shall both be removed, and bare spots exceeding specified limits shall be reseeded.
- F. If lawn or grass is established in the fall and maintenance is required to continue into spring months, lawn and grass shall receive an application of lime and fertilizer in the spring. Lime and fertilizer shall be spread in a uniform layer over the entire lawn surface, at the following rates.

<u>Material</u>	<u>Application Rate</u>
Lime	100 lb./1000 sq. ft.
Fertilizer	20 lb./1000 sq. ft.

- G. Remove rope barricades only after second cutting of lawns or as directed by the university.

END OF SECTION 32 92 00

SECTION 32 93 00 - TREES, PLANTS, AND GROUND COVERS

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Provide all materials and equipment, and do all work required to complete the planting, including furnishing and placing planting soil, as indicated on the Drawings and as specified.
- B. Related Work: The following items are not included in this Section and are specified under the designated Sections:
1. Section 312000, EARTHWORK; Establishment of subgrade elevation.
  2. Section 329119, LANDSCAPE GRADING.
  3. Section 329200, LAWNS AND GRASSES.
  4. Section 329600, TRANSPLANTING.

1.3 REFERENCES

- A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern. All standards shall include the latest additions and amendments as of the date of advertisement for bids.
1. American National Standards Institute, Inc. (ANSI):

Z60.1	American Standard for Nursery Stock (Sponsor: American Nursery and Landscape Association)
A 300	American National Standards for Tree Care Operations
  2. American Society for Testing and Materials (ASTM):

C 136	Sieve Analysis of Fine and Coarse Aggregates
D 422	Particle-Size Analysis of Soils



E 11 Wire-Cloth Sieves for Testing Purposes

F 405 Corrugated Polyethylene (Pe) Tubing and Fittings

4. "Hortus Third", A Concise Dictionary of Plants Cultivated in the United States and Canada, Cornell University, L.H. Bailey Hortorium, MacMillian Publishing Co., New York, NY.

#### 1.4 SUBMITTALS

- A. Samples: The following samples shall be submitted:

<u>Material</u>	<u>Sample Size or Quantity</u>
Mulch	1 ft. <sup>3</sup>
Compost	1 ft. <sup>3</sup>
Soil separator	1 ft. <sup>3</sup>
Topsoil	1 ft. <sup>3</sup>
Planting soil	1 ft. <sup>3</sup>
Tree stake	24 in. length
Tree wrap	24 in. length

- B. Manufacturer's Product Data: Manufacturer's product data shall be submitted for the following materials:

Aluminum sulfate  
Antidessicant  
Fertilizer  
Fungicide  
Herbicide  
Insecticide  
Compost  
Tree wrap

- C. Certificates: Labels from the manufacturer certifying that the product meets the specified requirements shall be submitted for the following materials:

Commercial fertilizer  
Limestone  
Compost

- D. Test Reports: Test reports from an approved testing agency indicating compliance with the specifications shall be submitted for topsoil and any other materials designated by the Architect.

1.5 OWNER'S INSPECTION AND TESTING

- A. Work will be subject to inspection at all times by the Architect. The Owner reserves the right to engage an independent testing laboratory in accordance with requirements of Section 01 4500, QUALITY CONTROL to analyze and test materials used in the construction of the work. Where directed by the Architect, the testing laboratory will make material analyses and will report to the Architect whether materials conform to the requirements of this specification.
1. Cost of tests and material analyses made by the testing laboratory will be borne by the Owner when they indicate compliance with the specification, and by the Contractor when they indicate non-compliance.
  2. Testing equipment will be provided by and tests performed by the testing laboratory.

1.6 CONTRACTOR'S INSPECTION AND TESTING

- A. The Contractor shall engage an independent testing agency, experienced in the testing of agricultural soils and acceptable to the Architect, to perform the topsoil/planting soil tests and analyses specified herein. All costs associated with testing shall be the Contractor's responsibility.

1. Particle size analysis shall include the following gradient of mineral

content: <u>USDA Designation</u>	<u>Size in mm</u>
Gravel	+ 2 mm
Very coarse sand	1-2 mm
Coarse sand	0.5-1 mm
Medium sand	0.25-0.5 mm
Fine sand	0.1-0.25 mm
Very fine sand	0.05-0.1 mm
Silt	0.002-0.05 mm
Clay	< 0.002 mm

2. Chemical analysis shall include the following:
  - a. pH and buffer pH
  - b. percentage of organic content by oven-dried weight
  - c. Nutrient levels by parts per million, including phosphorus, potassium, magnesium, manganese, iron, zinc, and calcium. Nutrient test shall include testing laboratory recommendations for supplemental additions to the soil, if necessary, based on the requirements for ornamental horticultural plants. Recommendations shall include rates at which additives are to be applied.
  - d. Soluble salt by electrical conductivity of a 1:2 soil/water sample.

1.7 SOURCE QUALITY CONTROL

- A. Identification of plant names shall be as listed in "Hortus Third".
- B. Selection of Plant Materials: Submit to the Architect the names and locations of nurseries and/or re-wholesalers or distributors proposed as sources of acceptable plant material. Inspect all plant materials to determine that they meet the requirements of this section. Proposed materials shall be flagged at the nurseries by the Contractor prior to viewing by the Architect.
  - 1. Schedule with the Architect a time for viewing plant material at the nursery and/or re- wholesaler or distributor facilities. Trips shall be efficiently arranged to allow Architect to maximize viewing time. A minimum of four weeks shall be allowed for this viewing prior to time that plants are to be transported to the project site.
  - 2. Architect may choose to attach a seal to each plant, or representative samples.
  - 3. If requested by the Architect, photographs of plant material or representative samples of plants shall be submitted by the Contractor.
  - 4. If re-wholesalers or distributors are proposed as sources of plant material, the Contractor shall supply the Architect with names and locations of nurseries from which plants were obtained.
  - 5. Viewing and/or sealing of plant materials by the Architect prior to shipping does not preclude the Architect's right to reject material for non-conformance to specifications at the site of planting.

#### 1.8 SOURCE QUALITY CONTROL

- A. Identification of plant materials shall be as named in "Hortus Third".
- B. Selection of Plant Materials: Contractor shall submit to Architect a complete list of all proposed nurseries including location, contact #, plant list for each nursery, all proposed substitutions, credits and/or additional charges. No tagging will occur until this list is complete and submitted. Contractor shall be responsible for delays if list is not submitted complete and in advance of proposed tagging dates.
  - 1. Inspect all nursery materials to determine that the materials meet the requirements of this section. Proposed materials shall be flagged by the nurseries for review by the Contractor and the Architect.
  - 2. Schedule with the Architect a time for viewing plant material at the nursery. Trips to nurseries shall be efficiently arranged to allow Architect to maximize viewing time. The trips shall for the architect to review the plant materials shall be paid for by the contractor. A minimum of six weeks shall be allowed for this viewing prior to time that plants are to be dug.
  - 3. Architect may choose to attach seal to each plant, or representative samples.
  - 4. Viewing and/or sealing of plant materials by the Architect at the nursery does not preclude the Architect's right to reject material at the site of planting.
  - 5. Architect will provide a maximum of two (2) tagging trips.
- C. Plant Photographs: Include color photographs in digital format of each required species and size of plant material as it will be furnished for the Project. Take photographs from an angle depicting true size and condition of the plant to be provided. Include a scale rod or

other measuring device in each photograph. Include a minimum of three photographs showing best plant quality and worst plant quality for each species to be furnished. Clearly identify photographs with botanical name, size and source nursery.

#### 1.9 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful establishment of plants. Installer shall provide evidence of the following credentials:
1. Professional Membership: Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
  2. Experience: Five years' experience in landscape installation in addition to requirements in Division 01 General Requirements."
  3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
  4. 3 projects similar scale (within 10% of SF of proposed project) within last 5 years
  5. 3 references with phone numbers
  6. 3 photos each for each reference project
  7. Positive responses from all references
  8. Reference project review by Architect and Owner within New England area
- B. Pesticide Applicator: State licensed, commercial.
- C. Soil-Testing Laboratory Qualifications: An independent or university 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.

#### 1.10 PLANT MATERIAL QUANTITIES

- A. In the event of a discrepancy in plant material quantities between the Drawings and the Plant List(s), the larger quantity shall be required.

#### 1.11 UNAVAILABILITY OF PLANT MATERIALS

- A. Before changes or substitutions can be made due to unavailability of plant material, submit satisfactory evidence that the Contractor has advertised for a one month period in a trade journal such as the "American Nurseryman", (Tel. 312-427-7339 and Fax: 312-427-7346), with no response, or has undertaken other methods of locating plant material acceptable to the Architect.

#### 1.12 DELIVERY, STORAGE, AND HANDLING

- A. Transportation of Plant Material: Plants transported to the project in open vehicles shall be covered with tarpaulins or other suitable covers securely fastened to the body of the vehicle to prevent injury to the plants. Closed vehicles shall be adequately ventilated to prevent overheating of the plants. Trees shall not be transported when daytime air temperatures

are below 20°.

1. Plants shall be kept moist, fresh, and protected at all times. Such protection shall encompass the entire period during which the plants are in transit, being handled, or are in temporary storage.
  2. Unless otherwise authorized by the Architect, notify the Architect at least two working days in advance of the anticipated delivery date of any plant material. A legible copy of the bill of lading, showing the quantities, kinds, and sizes of materials included for each shipment shall be furnished to the Architect, if requested.
- B. Storage: Unless specific authorization is obtained from the Architect, unprotected plants shall not remain on the site of work longer than three days prior to being planted.
1. Plants that are not planted immediately shall be protected as follows:
    - a. Earth balls shall be kept moist, not be allowed to freeze, and their solidity carefully preserved.
  2. Both the duration and method of storage of plant materials shall be subject to the approval of the Architect.
- C. Handling of Plant Materials: Exercise care in handling plant materials to avoid damage or stress.

#### 1.13 REJECTION OF MATERIALS

- A. Evidence of inadequate protection following digging, carelessness while in transit, or improper handling or storage, shall be cause for rejection.
- B. Upon arrival at the temporary storage location or the site of the work, plants shall be inspected for proper shipping procedures. Plants with roots dried out, large branches broken, balls of earth broken or loosened, or areas of bark torn shall be subject to rejection by the Architect.
- C. Rejected plants shall be removed from the area of work and replaced with same species of the required size and quality.

#### 1.14 DIGGING/PLANTING SEASONS

- A. Spring Digging: Spring digging of plant materials may commence as soon as the ground has thawed and weather conditions make it practicable to dig at the nursery.
  1. Deciduous plants shall not be dug after they have leafed out.
  2. Broadleaf evergreens and conifers shall not be dug after new growth or candle push is visible.
- B. Fall Digging: Fall digging of plant materials may commence after dormancy has begun and shall continue until such time as the ground has frozen or weather conditions make it impractical to work.

1. Fall digging hazards shall conform to American National Standards Institute, Inc. (ANSI) species and guidelines.

- B. Planting Seasons: Planting shall only be performed when weather and soil conditions are suitable for planting the material specified, in accordance with locally accepted practice, approval of the Architect, and to maintain the Contractor's guarantee.

#### 1.15 ACCEPTANCE FOR SUBSTANTIAL COMPLETION

- A. The Architect shall inspect all work of this Section for Acceptance for Substantial Completion upon receipt of written notice of completion by the Contractor. The request shall be received at least ten calendar days before the anticipated date of inspection.
- B. Acceptance of plant material by the Architect shall be for general conformance to specified size, character, and quality, and shall not diminish responsibility for full conformance to the Contract Documents.
- C. Upon completion and reinspection of all repairs or renewals necessary in the judgement of the Architect, the Architect shall recommend that Acceptance for Substantial Completion of the work of this Section be given by the Owner.
- D. Acceptance in Part
  1. The work may be Accepted in parts when it is deemed to be in the Owner's best interest to do so, and when permission is given to the Contractor in writing to complete the work in parts.
  2. Acceptance and use of such areas by the Owner shall not waive any other provisions of this Contract.

#### 1.16 MAINTENANCE

- A. The Contractor shall maintain plant material until the completion of the guarantee period and Final Acceptance of work, as described in paragraph 1.19 of this Section.

#### 1.17 GUARANTEE

- A. Plants shall be guaranteed for a period of 18 months after the date of Acceptance by the Owner.
  1. When the work is accepted in parts, the guarantee periods shall extend from each of the partial Acceptances to the terminal date of the last guarantee period. Thus, all guarantee periods terminate at one time.
- B. Plants shall be healthy, free of pests and disease, and in flourishing condition at the end of the guarantee period. Plants shall be free of dead and dying branches and branch tips, and

shall bear foliage of normal density, size, and color.

- C. Replace dead plants and all plants not in a vigorous, thriving condition, as determined by the Architect during and at the end of the guarantee period, without cost to the Owner, as soon as weather conditions permit and within the specified planting period.
  - 1. Replacements shall closely match adjacent specimens of the same species. Replacements shall be subject to all requirements stated in this Specification.
  - 2. Make all necessary repairs due to plant replacements. Such repairs shall be done at no extra cost to the Owner.
  - 3. The guarantee of all replacement plants shall extend for an additional 18 month period from the date of their Acceptance after replacement. In the event that a replacement plant is not acceptable during or at the end of the said extended guarantee period, the Owner may elect one more replacement or credit for each item.
- D. At the end of the guarantee period, and no less than five days prior to final inspection, staking and guying materials, and tree wrap and ties shall be removed from the site.

#### 1.18 FINAL INSPECTION AND FINAL ACCEPTANCE

- A. At the end of the guarantee period, the Architect shall, upon receipt of written notice of end of guarantee period, inspect the work for Final Acceptance. Request shall be received at least ten calendar days before the anticipated date for Final Inspection.
- B. Upon completion and reinspection of full repairs or replacements necessary in the judgment of the Architect at that time, the Architect shall recommend to the Owner that Final Acceptance of the work of this Section be given.

### PART 2 - PRODUCTS

#### 2.1 PLANTS

- A. Except as otherwise specified, size and grade of plant materials and their root balls shall conform to ANSI Z60.1.
- B. Plants shall have outstanding form; symmetrical, heavily branched with an even branch distribution, densely foliated and/or budded, and a strong, straight, distinct leader where this is characteristic of species. Plants shall possess a normal balance for the species between height and spread. The Architect will be the final arbiter of acceptability of plant form.
  - 1. Shade Trees: Single-stem trees with straight trunk, well-balanced crown, and intact leader, of height and caliper indicated, complying with ANSI Z60.1 for type of trees required.
  - 2. Small Trees: Branched or pruned naturally according to species and type, with relationship of caliper, height, and branching according to ANSI Z60.1; stem form as follows:

3. Multistem Trees: Branched or pruned naturally according to species and type, with relationship of caliper, height, and branching according to ANSI Z60.1; stem form as follows:
  4. Deciduous Shrubs: Form and Size: Deciduous shrubs with not less than the minimum number of canes required by and measured according to ANSI Z60.1 for type, shape, and height of shrub.
  5. Coniferous Evergreens: Form and Size: Normal-quality, well-balanced, coniferous evergreens, of type, height, spread, and shape required, complying with ANSI Z60.1.
  6. Coniferous Evergreens: Form and Size: Specimen-quality, exceptionally heavy, tightly knit, symmetrically shaped coniferous evergreens and the following grade:
  7. Broadleaf Evergreens: Form and Size: Normal-quality, well-balanced, broadleaf evergreens, of type, height, spread, and shape required, complying with ANSI Z60.1.
- C. Plants shall be healthy and vigorous, free of disease, insect pests and their eggs, and larvae.
- D. Plants shall have a well-developed fibrous root system.
- E. Plants shall be free of physical damage such as scrapes, broken or split branches, scars, bark abrasions, sunscalds, fresh limb cuts, disfiguring knots, or other defects.
- F. Plants shall meet the sizes indicated on the Plant List. Plants larger or smaller than specified may be used only if accepted in writing by the Architect.
- G. Where a size or caliper range is stated, at least 50% of the material shall be closer in size to the top of the range stated.
- H. Plants shall not be pruned before delivery.
- I. All trees and shrubs shall be labeled. Labels shall be durable and legible, stating the correct plant name and size in weather-resistant ink or embossed process. Labels shall be securely attached to all plants prior to delivery to the site, being careful not to restrict growth.
- J. Plants indicated as "B&B" shall be balled and burlapped.
1. Unless otherwise permitted by the Architect, plants shall be nursery grown.
  2. Plants shall be grown for at least two years under climatic conditions similar to those in the locality of the Project.
  3. Nursery grown plants shall be dug in the current planting season. No heeled in plants or plants from cold storage that were dug in the previous season shall be accepted.
- K. Container grown plants shall be well rooted and established in the container in which they were grown. They shall have grown in the container for a sufficient length of time for the root system to hold the planting medium when taken from the container, but not long enough to become root bound. Container grown plants exceeding the sizes indicated in ANSI Z60.1 shall have containers which are not less than 75% of the ball sizes for comparable B&B plant material. Each container plant shall be inspected and circling roots



loosened or pruned as needed.

L. Canes or Trunk(s) and Branches:

1. Very well formed and sturdy with distinct leader and no crotches that may interfere with growth of leader. Trees with included bark in crotches shall be avoided.
2. Branching well spaced and uniformly distributed both vertically and around the circumference to form a well balanced plant.
3. Scars shall be free of rot and not exceed  $\frac{1}{4}$  the diameter of the wood beneath in greatest dimension unless completely healed (except pruning scars).
4. Pruning scars clean cut leaving little or no protrusion from the trunk or branch.
5. Graft union completely healed.
6. No mechanical or pest damage.
7. No extreme succulence.
8. Evidence of adequate twig growth in the past 2-4 years, and well-formed buds.

M. Foliage:

1. Densely supplied with healthy, vigorous leaves of normal size, shape, color and texture (except shrubs moved bare-root or deciduous shrubs when dormant).
2. One half of the foliage should be growing on the lower  $\frac{2}{3}$  of the trunk.
3. No chlorosis.
4. No more than 5% of total foliage affected by pest or mechanical damage.

N. Root System:

1. Sturdily established and evenly distributed.
2. Container grown plants shall be well developed and hold the soil ball together when removed from the container.
3. Container grown plants shall not be excessively rootbound (except if deliberately grown rootbound to produce a dwarf plant).

## 2.2 GROUND COVER PLANTS AND VINES

A. Ground Cover: Provide ground cover of species indicated, established and well rooted in pots or similar containers, and complying with ANSI Z60.1 and the following requirements:

1. English Ivy (*Hedera Helix* or *Baltica*): 2-1/4-inch (57-mm) pot size with a minimum of 1 runner not less than 8 inches (200 mm) long.
2. English Ivy (*Hedera Helix* or *Baltica*): 3-inch (75-mm) pot size with a minimum of 2 runners not less than 10 inches (250 mm) long.
3. Dwarf Periwinkle (*Vinca Minor*): 2-1/4-inch (57-mm) pot size with a minimum of 3 to 6 runners not less than 6 to 8 inches (150 to 200 mm) long.
4. Dwarf Periwinkle (*Vinca Minor*): 3-inch (75-mm) pot size with a minimum of 6 to 8 runners not less than 8 to 10 inches (200 to 250 mm) long.
5. Japanese Spurge (*Pachysandra Terminalis*): 2-1/4-inch (57-mm) pot size with 1 or more stems.
6. Japanese Spurge (*Pachysandra Terminalis*): 3-inch (75-mm) pot size with 2 or more

stems.

7. Japanese Spurge (*Pachysandra Terminalis*): 4-inch (100-mm) pot size with 3 or more stems.

- B. Fast-Growing Vines: Provide vines of species indicated complying with requirements in ANSI Z60.1 as follows:

1. Two-year plants with heavy, well-branched tops, with not less than 3 runners 18 inches (450 mm) or more in length, and with a vigorous well-developed root system.
2. Provide field-grown vines. Vines grown in pots or other containers of adequate size and acclimated to outside conditions will also be acceptable.

### 2.3 SEASONAL FLOWERS

- A. Seasonal flowers shall be provided. Contractor shall provide one full year installation of material listed below. Initial planting shall occur two weeks prior to completion of the work. Initial material for installation shall be contingent upon season in which initial planting occurs.

### 2.4 BULBS

- A. Bulbs shall be of sizes suitable for outdoor bedding purposes. Both grade names and sizes shall be as indicated on the Drawings and/or Plant List(s).

### 2.5 PLANTING SOIL

- A. Existing Topsoil

1. Existing topsoil from on-site source(s) may be used for planting soil, to the extent available, if it meets the requirements of this Section for planting soil, or if approved by the Architect.

- B. Planting Soil

1. Planting soil shall be composed of a natural, fertile, friable soil typical of cultivated topsoils of the locality, suitable for the germination of seeds and support of vegetative growth, with additives, if required, to achieve particle distribution and organic content specifications. Topsoil shall be taken from a well-drained, arable site, free of subsoil, large stones, earth clods, sticks, stumps, clay lumps, roots, other objectionable, extraneous matter or debris nor contain toxic substances. Planting soil shall have a pH value between 5.5 and 6.5 and organic matter content of 5 to 10% of total dry weight.
2. Planting soil shall have the following mechanical analysis (see paragraph 1.07 for particle sizes):

Approximate Particle Distribution

Gravel	Less than 10%
Coarse to medium sand	55 – 65%

Fine to very fine sand	15 – 25%
Silt	10– 20%
Clay	15 – 20%

3. Minimum planting soil nutrient levels shall be: Nitrogen @ 5% average of organic matter, Phosphorus @ .02 to .05% average of total soil content, Potassium @ 1.2% average of total soil content.
4. The Contractor shall provide the Architect with planting soil test results, as specified in Paragraph 1.07, before the start of planting operations. If planting soil does not fall within the required particle distribution, organic content, or pH range, it shall be adjusted to meet the specifications through the addition of sand, compost, limestone, or aluminum sulfate to bring it within the specified limits.
5. Planting soil for ericaceous shrubs shall have a pH value range of 4.5 to 5.0.

## 2.6 COMPOST

- A. Compost shall be derived from organic wastes such as food and agricultural residues, animal manures, mixed solid waste that meet all State Environmental Agency requirements. The product shall be well composted, free of viable weed seeds and contain material of a generally humus nature capable of sustaining growth of vegetation, with no materials toxic to plant growth.

1. Compost shall have the following properties:

<u>Parameters</u>	<u>Range</u>
pH	5.5 – 6.5
Moisture Content	35% - 55%
Soluble Salts	□□4.0 mmhos (dS)
C:N ratio	11 – 22:1
Particle Size	< 1”
Organic Matter Content	> 50%
Bulk Density	< 1000 lbs./cubic yard
Foreign Matter	< 1% (dry weight)

2. Compost generator shall also provide minimum available nitrogen and other macro and micro nutrients to determine fertilizer requirements.
3. Compost shall be “AllGro”, distributed by AllGro, 4 Liberty Lane West, Hampton, NH 03842; “Agresoil”, distributed by Agresource, 100 Main Street, Amesbury, MA 01913; or approved equal.
4. Guidelines for quantity of compost required to achieve suitable soil organic content in soil mixes for ornamental horticultural planting shall be as recommended by the compost manufacturer.

## 2.7 LIMESTONE

- A. Limestone shall be an approved agricultural limestone containing no less than 50% of total carbonates, and 25% total magnesium with a neutralizing value of at least 100%. The material shall be ground to such a fineness that 40% will pass through a No. 100 U.S. Standard Sieve, and 98% will pass through a No. 20 U.S. Standard Sieve. The lime shall

be uniform in composition, dry and free flowing, and shall be delivered to the site in the original unopened containers, each bearing the manufacturer's guaranteed analysis. Any lime which becomes caked or otherwise damaged making it unsuitable for use, will be rejected.

2.8 ALUMINUM SULFATE

- A. Aluminum sulfate shall be unadulterated and shall be delivered in containers with the name of the material and manufacturer and net weight of contents.

2.9 WATER

- A. Water shall be suitable for irrigation and shall be free from ingredients harmful to plant life.

2.10 FERTILIZER

- A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency. Manufacturer's literature shall be submitted for approval.

- B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.

2.11 LIQUID BIOLOGICAL AMENDMENTS (In lieu of fertilizer)

- A. Liquid Biological Amendments standards:

1. Desired Levels Of Organisms (Direct Microscopy)

- 10 to 150 or more  $\mu\text{g}$  active bacteria /ml.
- 150  $\mu\text{g}$  to 300 or more  $\mu\text{g}$  total bacteria /ml compost tea < 2 to 10  $\mu\text{g}$  or more active fungi /ml.
- 5 to 20 or more  $\mu\text{g}$  total fungal biomass/ml.
- 2,000 or more protozoa < 1,000 or more flagellates < 1,000 or more amoebae < 10 – 30 ciliates.
- 2 to 10 BENEFICIAL nematodes/ ml (desired; typically lacking in tea) < 1 - 5 bacterial-feeders < up to 5 fungal-feeders < 1 - 5 predatory nematodes (typically lacking in tea) < No root-feeding nematodes.

2. Minimum of 10% active bacteria and fungi

3. Protozoa Inoculums:

- 4,000 or more protozoa/ml. 2,500 or more flagellates, 1,500 or more amoebae  
10-30 ciliates.

4. Nematode extractions:

- 24-32 beneficial nematodes/ml. 10-12 bacterial-feeders, 7-10 fungal feeders  
and 7-10 predatory nematodes.

5. Mychorrizal Spores:

- 9 Species Endo (31,200 prop/lb).
- 11 Species Ecto (1.5 billion prop/lb)

2.12 SUPERPHOSPHATE

- A. Superphosphate shall be composed of finely ground phosphate rock as commonly used for agricultural purposes, and containing not less than 20% available phosphoric acid. The superphosphate shall be delivered to the site in the original unopened containers, each bearing the manufacturer's guaranteed analysis. Any superphosphate which becomes caked or otherwise damaged making it unsuitable for use, will be rejected.

2.13 MULCH

- A. Mulch shall be a 100% fine-shredded pine bark, of uniform size and free from rot, leaves, twigs, debris, stones, or any material harmful to plant growth. Bark shall have been shredded and stockpiled no less than six months and no more than two years before use. No chunks 3 in. or more in size, and thicker than 1/4 in. shall be left on site.

2.14 GUYING AND STAKING MATERIALS

- A. Wood Stakes: Straight, sound, rough sawn lumber 2 in. x 2 in., if square, or 2-1/2 in. diameter, if round. Stakes shall be stained dark green. Wire for staking shall be 12 gauge steel.
- B. Wire for Guying: Galvanized steel 1 x 19 preformed 3/16 in. diameter. Thimbles and nicopress clips shall be used for connections and splices.
- C. Turnbuckles: 1/4" x 7/8" Galvanized steel with a 2 1/2" in. lengthwise opening fitted with eyebolts, as manufactured by Crown Bolt Inc., or approved equal.
- D. Hose: High quality braided rubber hose, 3/4 in. diameter and suitable length, black in color.
- E. Strapping: Arbortie, manufactured by DeepRoot Green Infrastructure, LLC, 530 Washington Street, San Francisco, CA 94111 Tel: 800 458 7668 or 415 781 9700; Fax: 800 277 7668 or 415 781 0191, or approved equal.

2.15 TREE HARNESS SYSTEM

- A. Tree harness system shall be below grade Duckbill Root Ball Fixing System, Model 68 RBK Kit and Model 88 RBK Kit as required, manufactured by Foresight Products, Inc.,

Commerce City, CO 80022,. Supply root ball anchors in complete kits; one complete kit shall be furnished per tree to be supported. Tree supports shall be sized in conformance with manufacturer's published design guidelines.

1. Provide entire root ball fixing system including but not limited to 3 model 88-DB1's with D-rings, Red tensioning strap 21 ft. (6.4m) with easy hand ratchet and complete installation instructions, from one supplier.
2. All plant material shall utilize a tree harness system unless approved otherwise.

#### 2.16 WRAPPING MATERIAL

A. Tree wrapping material shall be equal to the following:

1. Osnaburg Cloth, 4-7/8 in. wide, unbleached, pinked on both edges, manufactured by The Carnegie Textile Co., 1734 Ivanhoe Road, P.O. Box 10276, Cleveland, OH 44110.
2. Tree wrap shall be secured to the trunk using bio-degradable tape suitable for nursery use and expected to degrade in sunlight in less than two years after installation.
3. Option: Arbor Tape, supplied by American Arborist Supplies, 882 S Matlack Street, Unit A, West Chester, PA 19382; Phone: 800-441-8381/610-430-1214; Fax: 610-430-8560; E-mail Address: [info@arborist.com](mailto:info@arborist.com), or approved equal.

#### 2.17 ANTIDESICCANT

- A. Antidesiccant shall be an emulsion specifically manufactured for plant protection which provides a protective film over plant surfaces which is permeable enough to permit transpiration. Antidesiccant shall be delivered in manufacturer's sealed containers and shall contain manufacturer's printed instructions for use.
- B. Antidesiccant shall be equal to the following:

Product

Manufacturer

Wilt-Pruf	Wilt-Pruf Products, Inc. P.O. Box 469 Essex, CT 06426
Winter Shield	Rockland Corporation

#### 2.18 FUNGICIDE

- A. Fungicide shall be "Bordeaux Mix", manufactured by Hi-Yield, or approved equal.

#### 2.19 INSECTICIDE

- A. Insecticide shall be LESCO Horticultural Oil spray, #001150, for control of insects and mites, manufactured by LESCO, Rocky River, OH 44116, or approved equal.
- A. Insecticide shall be LESCO Sevin Brand SL, #019106, for broad spectrum control for most

trees, shrubs and ornamentals, manufactured by LESCO, Rocky River, OH 44116, or approved equal.

2.20 POST-EMERGENT HERBICIDE

- A. Herbicide shall be QuikPRO™ herbicide, formulated as a water-soluble granule and packaged in easy-measure bottles, complete weed control, manufactured by Monsanto, or approved equal.

2.21 PRE-EMERGENT HERBICIDE

- A. Herbicide shall be LESCO Ornamental Herbicide 5G, pre-emergent grassy and selected broadleaf weed control for ornamental plants, nursery stock and ground covers, #019515, manufactured by LESCO, Rocky River, OH 44116, or approved equal.

2.22 EDGING

- A. Steel edging shall be DuraEdge, manufactured by The J.D. Russell Company; Tel. 1-800-888-7425, or approved equal. Steel edging shall be shop fabricated, 3/16 in. thick x 4 in. deep, steel, primed and painted black. Edging shall be furnished in 16 ft. lengths.

1. Steel edging shall accommodate staking steel edging every 30 in. o.c.
2. Steel stakes shall be 16 in. long, tapered.

2.23 TREE WATERING STAKE

- A. Tree watering stake shall be Deep Drip Tree Watering Stake, manufactured by Green King, LLC – World Headquarters, 162 W. Boxelder Place – Suite #2, Chandler, AZ 85225; Tel: (480) 422-0251; Fax: (480) 503-2329; Email: info@deepdrip.com, or approved equal.

1. Stakes shall be 14 in., 24 in., or 36 in. as recommended appropriate by manufacturer for size of tree or shrub.

PART 3 - EXECUTION

3.1 PREPARATION OF PLANT MATERIALS

- A. Immediately before digging and following consultation with the Architect, spray all evergreen or deciduous trees in full leaf with Transplant Biostimulant, applying an adequate film over trunks, branches, twigs and foliage and apply Transplant Biostimulant to the root ball area
- B. Dig, and ball and burlap (B&B) plants with firm, natural balls of earth, of depth and diameter not less than that recommended by the American Standard for Nursery stock. Plants moved with a ball will not be accepted if the ball is cracked or broken before or during planting operation. Remove all grass, weeds and accumulated soil resulting from nursery cultivation from the top of the root ball prior to digging so that the original trunk

flare shows on top of the root ball.

- C. Use only natural burlap and jute twine. Do not use synthetic fibers or wire to ball and burlap root balls. Wire baskets will be acceptable if removed in accordance with these specifications.
- D. All plant material in transit or temporary stored shall be covered with burlap or similar covering to keep plants from drying out.
- E. Ship and store bare root material in refrigerated trucks and storage areas. Keep roots moist and cool until time of planting.
- F. If the construction schedule requires trees over 3 ½" in caliper to be planted in the fall, that are of a species considered to be difficult to transplant in the fall, these trees shall be root pruned the previous spring in the nursery.
  - 1. The Architect will determine tree species to be root pruned.
  - 2. A trench shall be dug around the tree at the limit of the proposed root ball to a minimum depth of 24" and back-filled.
  - 3. A 3" high saucer shall be built around the tree outside the edge of the trench.
  - 4. The tree shall be guyed or braced.
  - 5. The tree shall be watered as necessary through the summer.
  - 6. When the tree is dug in the fall, the digging shall be done using methods that preserve the new root growth growing in the soft soil of the trench.
  - 7. Root pruning, when required, shall be done at no additional cost to the Owner, except for owner pre-purchased trees.

### 3.2 EXAMINATION OF SUBGRADE

- A. Examine subgrade and rough grading before planting. Alert Architect to unacceptable rough grading or subgrade conditions.

### 3.3 DECOMPACTION OF PLANTING AREAS

- A. After subgrade levels have been reached and immediately prior to placing planting soils, the entire subgrade area shall be loosened to a minimum depth of 12 inches utilizing the bucket of a backhoe or equivalent equipment.
- B. Any subgrade areas which have become heavily compacted (defined as exceeding 86% - 88% compaction ASTM C698 Standard Proctor) including, but not limited to, temporary parking areas, material stockpile areas, temporary roadways, construction areas, areas shown on the plans, or areas identified by Architect shall be deep-scarified. Immediately prior to placing soils, heavily compacted areas shall be loosened to a minimum depth of 36 inches using the teeth of a backhoe or other suitable equipment. Frequency of compaction tests shall be one per 200 square feet.
- C. Using a wide-track bulldozer size D-5 or smaller, compact the scarified subgrade to 86% - 88% compaction ASTM D698 Standard Proctor. Contractor shall provide shovel dug test pits to the full depth of the mitigation, where located per the direction of the Architect,



in order for the Architect to review whether the work has been done as required. Backfill the pits after the review(s).

- D. Confirm that the subgrade is at the proper elevation and that no further earthwork is required to bring the subgrade to proper elevations. Provide a written report to Architect indicating that subgrade has been placed to the required elevations, has been decompacted according to the Contract Documents and is ready for inspection at least 3 days prior to placing planting soil. Perform no work of placing and spreading planting mixes until elevations have been confirmed and written report has been accepted by the Architect.
- E. After the soils have been loosened and inspected, topsoil may be spread by using a wide track bulldozer size D-5 or smaller or may be dumped and spread with bucket of a backhoe from the edge of the loosened area. No rubber-tired equipment or heavy equipment except for small bulldozer shall pass over the subsoils (subgrade) after they have been loosened. If Contractor plans to utilize such areas for any use of heavy equipment, this should be carried out prior to beginning the process of loosening soils or filling in that area, or it shall be rescarified to meet this specification requirement.

#### 3.4 SOIL DRAINAGE/DETRIMENTAL SOILS

- A. Test drainage of five planting pits in locations as directed by the Architect. Pits shall be filled with water twice in succession. The time at which water is put into the pit for a second filling shall be noted. Architect shall then be notified of the time it takes for pit to drain completely. Planting operations shall not proceed until Architect has reviewed test drainage results.
  - 1. To test drainage, dig a hole about 1 foot deep. Fill with water and allow it to drain completely. Immediately refill the pit and measure the depth of the water with a ruler. 15 minutes later, measure the drop in water in inches, and multiply by 4 to calculate how much water drains in an hour.
  - 2. Less than 1 inch per hour is poor drainage, indicating the site may stay wet for periods during the year. Plants that don't tolerate poor drainage will suffer. 1 to 6 inches of drainage per hour is desirable. Soils that drain faster than 6 inches per hour have excessive drainage, and you should consider choosing plants that tolerate dry conditions and "droughty" soils.
- B. The Contractor shall notify the Architect in writing of all soil or drainage conditions that are considered detrimental to growth of plant material. Submit proposal and cost estimate for correction of the conditions for Architect's approval before starting work.

#### 3.5 LAYOUT OF PLANTING AREAS

- A. Individual trees shall be located in the field as indicated on the Drawings for Architect's approval prior to planting. Contractor shall provide one foreman, one loader with operator and two laborers to work with Architect in the field to determine the final location and orientation of each tree prior to planting. It is anticipated that this process may take several days to complete. Contractor shall plan to have this layout

crew available to work with Architect at a slow and deliberate pace in order to achieve the desired results.

- B. Individual shrubs and perennials to be planted shall be laid out in plant beds by the Contractor in ample time to allow inspection by the Architect.

### 3.6 PREPARATION OF SUBGRADE

- A. Subgrade shall be brought to true and uniform grade and shall be cleared of stones greater than 2 in., sticks, and other extraneous material.

### 3.7 PLANT PIT EXCAVATION

- A. Planting pits for trees and shrubs shall be excavated to the depth and dimensions indicated on the Drawings.
- B. Excavation shall not begin until locations are approved by the Architect.

### 3.8 EDGING

- A. Steel edging shall be installed at locations indicated on the Drawings. Where required, edging shall be cut square and accurately to required length.
  1. Steel edging shall be securely staked in required position. Stakes shall be driven every 30 in. o.c. along length of edging, .
  2. Adjacent lengths of edging shall overlap 8 in.

### 3.9 SPREADING OF PLANTING SOIL

- A. Planting soil shall be spread in lifts not greater than 12 inches and compacted to a density between 82% and 86% Standard Proctor Maximum Dry Density in accordance with ASTM D698. The surface area of each lift, including the subgrade after it has been compressed by a backhoe, shall be scarified by raking prior to placing the next lift.
- B. Place and spread planting medium to a depth greater than required such that after settlement, finished grade shall conform to the lines, grades and elevations shown on the Drawings. Ensure proper drainage in an uninterrupted pattern free of hollows and pockets.
- C. Remove stiff clods, lumps, brush, roots, stumps, litter and other foreign material and stones over 1 inch diameter and legally dispose of off-site.
- D. Surfaces shall be graded and smoothed, eliminating all sharp breaks by rounding, scraping off bumps and ridges, and filling in holes and cuts.

### 3.10 PLANTING

- A. Tree, shrub, and groundcover beds shall be excavated to the depth and widths indicated on the Drawings. If the planting pit for any tree is dug too deep, soil shall be added to bring it to correct level, and the soil shall be thoroughly tamped. Walls of plant pits shall be dug so that they are sloped as shown on the Drawings, and scarified. Do not excavate compacted subgrades of adjacent pavement or structures.
- B. Plants shall be set as indicated on Drawings. Plants shall be set so that the root flare is at, or slightly above, finished grade. Plants located in poorly drained soils shall be set 2 to 4 inches above finished grade, gradually sloping between the top of the root ball and the surrounding finished grade.
- C. Plants shall be turned to the desired orientation when required by Architect.
- D. Containerized plants shall be removed from container taking care not to damage roots. The side of the root ball shall be scarified to prevent root-bound condition before positioning in planting pit.
- E. Plants shall be positioned in center of planting pits, set plumb, and rigidly braced in position until all planting soil has been tamped solidly around the balls.
- F. Pits shall be backfilled with planting soil. Soil shall be worked carefully into voids and pockets, tamping lightly every 6 in.
  - 1. When pit is two-thirds full, plants shall be watered thoroughly, and water left to soak in before proceeding.
  - 2. At this time, ropes or strings on top of balls shall be cut and shall be pulled back. Burlap or cloth wrapping shall be left intact around ball except that portions of wrap that are exposed at top of ball shall be turned under and buried. Non-biodegradable ball wrapping and support wire shall be totally removed from ball and planting pit.
  - 3. Wire baskets shall be completely cut away from sides of root ball, and removed from pit. Bottom of basket may remain.
  - 4. Remove nursery plant identification tags.
- G. Backfilling and tamping shall then be finished and a saucer formed around plant pits as indicated on the Drawings.
- H. Saucer shall be filled with water and water left to soak in. Saucer shall then be filled with water again.

### 3.11 BULBS AND FLOWERING PLANTS

- A. Prepare flowering plant planting bed by application of fertilizers and pH-altering amendments and thoroughly rototilling into the top 12 in. prior to planting bulbs and

flowering plants.

- B. Bulbs shall be planted at depths and spacing indicated on the Drawings in soil cultivated a minimum depth of 12 in. Fertilizer and bone meal shall be incorporated at this time.
  - 1. After bulbs are placed, cover halfway with planting soil, water thoroughly, then cover completely with planting soil and water again.

### 3.12 PERENNIALS

- A. Set out and space plants 12 inches (300 mm) apart .
- B. Perennials: Dig at least 18" deep, but 12" is adequate. Work 4-6" humus into the top layers of soil by digging or tilling.
- I. Perennials: Check root ball after removing plant from its container. Encircling roots need to be gently loosened from the tight mat of root-bound plants. If roots are very dense at bottom of pot, slice off the bottom 1". If roots are seriously disturbed when planting, cut back some foliage to reduce the water stress that will occur. Plant at the same soil level as the plant was in its container.
- C. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.
- D. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.
- E. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

### 3.13 TREE WATERING STAKE

- A. Trees shall have 2-3 units on opposing sides or surrounding the tree base. After tree has been placed in the hole, insert 2-3 Deep Drip units vertically in the hole surrounding the tree before back-filling with soil. Stake size shall be as recommended by manufacturer. The top of Deep Drip can either be above ground level or below ground.
- B. When positioned in the ground, remove cap and insert end of irrigation drip line and emitter into the shaft, aligning the drip line with the slot in the cap. Re-install cap to secure drip line and stop excess debris from entering shaft.

### 3.14 LIQUID BIOLOGICAL AMENDMENTS (In lieu of fertilizer)

- A. In all new planting areas, create injection sites made every 2 feet in a grid pattern. If the viable root zone varies from this area, adjust the pattern accordingly. Each injection site shall have a 2-inch wide diameter by 8-inch deep column that will act as leaching fields during the planting process. After the liquid and aeration injection is completed, the injection columns shall be backfilled with a custom blend of long-term granular food

sources that include 25% feathermeal, 75% humate plus corresponding mychorrizal spores.

- B. Early spring injection for both Ecto and Endo Mychorrizal plants shall consist of 50% concentrated liquid Biological Amendment with 1/2 gallon per a 100 gallons of soluble kelp, humic acid and molasses (or fish hydrolysate).

### 3.15 FERTILIZER APPLICATION

- A. Fertilizer, if required, shall be applied at the rates recommended by soil testing results.

### 3.16 FUNGICIDE

- A. Immediately after planting, all trunks of deciduous trees shall be sprayed with fungicide, applied as directed by chemical manufacturer.

### 3.17 PRE-EMERGENT-HERBICIDE

- A. Immediately after planting, pre-emergent herbicide shall be applied to ornamental shrub beds and and around base of trees, in strict accordance with chemical manufacturer's printed instructions.

### 3.18 POST EMERGENT-HERBICIDE

- A. Upon the appearance of weeds within planted areas, pre-emergent herbicide shall be applied to ornamental shrub beds and and around base of trees, in strict accordance with chemical manufacturer's printed instructions.

### 3.19 INSECTICIDE

- A. Upon the appearance of insect problems, all trunks of deciduous trees shall be sprayed with insecticide, applied as directed by chemical manufacturer.

### 3.20 WRAPPING

- A. Trunks of deciduous trees shall be spiral wrapped to a minimum height of the first major branch. Wrap shall be applied from base up so that layers overlap and shed water. Secure at the top with flexible weatherproof tape, as specified.

### 3.21 STAKING AND GUYING

- A. Each tree shall be staked or guyed immediately following planting. All evergreen trees and deciduous trees over 4" caliper shall be guyed. Plants shall stand verticle and plumb after staking or guying. Set vertical stakes and space to avoid penetrating root balls or root masses. Allow enough slack to avoid rigid restraint of tree. Stakes and guys shall be installed as indicated on the Drawings.

3.22 ROOT BALL HARNESS SYSTEM

- A. Root ball of each tree shall be anchored immediately following planting. Plants shall stand verticle and plumb after installing root ball fixing kit. Harness system shall be installed in strict accordance with manufacturer's printed instructions and as indicated on the Drawings.

3.23 MULCHING

- A. Mulch shall be applied as follows (entire area listed shall be mulched):

<u>Plant Type</u>	<u>Mulch Area</u>	<u>Mulch Depth, in.</u>
Tree	Saucer	As Indicated
Shrub	Saucer or Bed	As Indicated
Ground Cover	Bed	As Indicated

Mulch shall not be allowed to cover the base of trunks.

3.24 PRUNING

- A. Each tree and shrub shall be pruned to preserve the natural character of the plant. Pruning shall be done after delivery of plants and after plants have been inspected and approved by the Architect. Pruning procedures shall be reviewed with Architect before proceeding.
- B. Pruning shall be done with clean, sharp tools. Cuts shall be made flush, leaving no stubs. No tree paint shall be used.
- C. Dead wood, suckers, and broken, weak, interfering and badly bruised branches shall be removed.

3.25 MAINTENANCE OF PLANTING

- A. Maintenance shall begin immediately after each plant is planted and shall continue until Final Acceptance.
- B. Maintenance shall consist of pruning, watering, cultivating, weeding, mulching, fertilizing, removal of dead material, repairing and replacing of tree stakes, tightening and repairing of guys, adjusting and replacing of damaged tree wrap material, resetting plants to proper grades and upright position, and furnishing and applying such sprays as are necessary to keep plantings free of insects and disease, and in a healthy growing condition.
- C. Daily watering of 1 gal./caliper inch should be delivered to the root ball of each tree during the first summer after planting. Continue through fall, reducing frequency. For trees larger than 3 inch caliper, fill saucer with 6 – 8 gallons twice per week during hot, dry weather, and once per week during cooler, wetter periods.

- D. Planting areas shall be kept free of weeds, grass, and other undesired vegetative growth.

END OF SECTION 32 93 00

STATE OF CONNECTICUT  
UNIVERSITY OF CONNECTICUT



SUSAN HERBST  
PRESIDENT

STUDENT UNION SENIOR SQUARE  
STORRS CAMPUS

2110 HILLSIDE RD  
STORRS, CT 06269

PROJECT NO.: 201462

PREPARED FOR:

OFFICE OF PLANNING, ARCHITECTURAL AND ENGINEERING SERVICES

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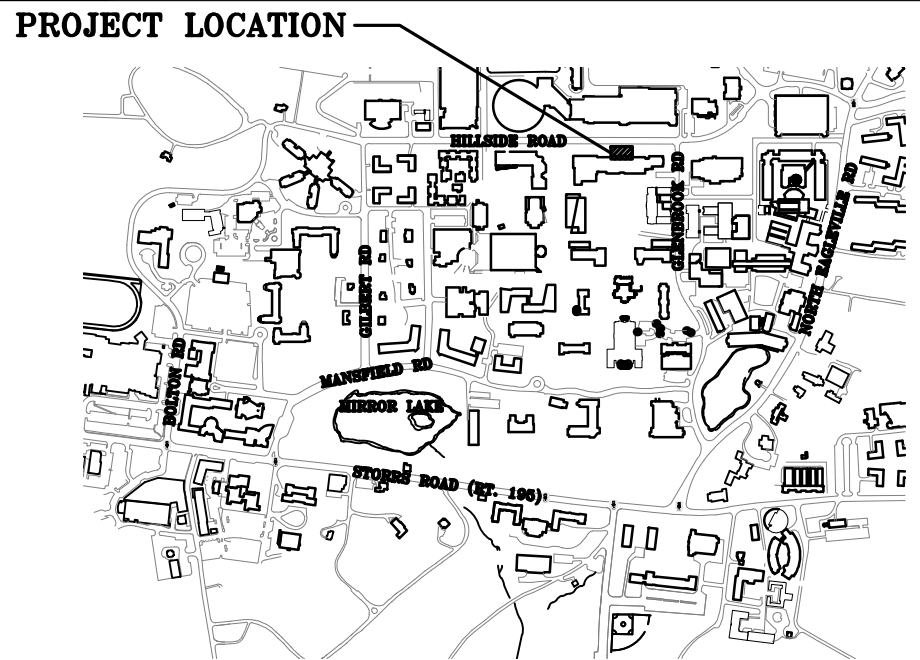
May 11, 2015



Office of University Planning  
Planning, Architectural & Engineering  
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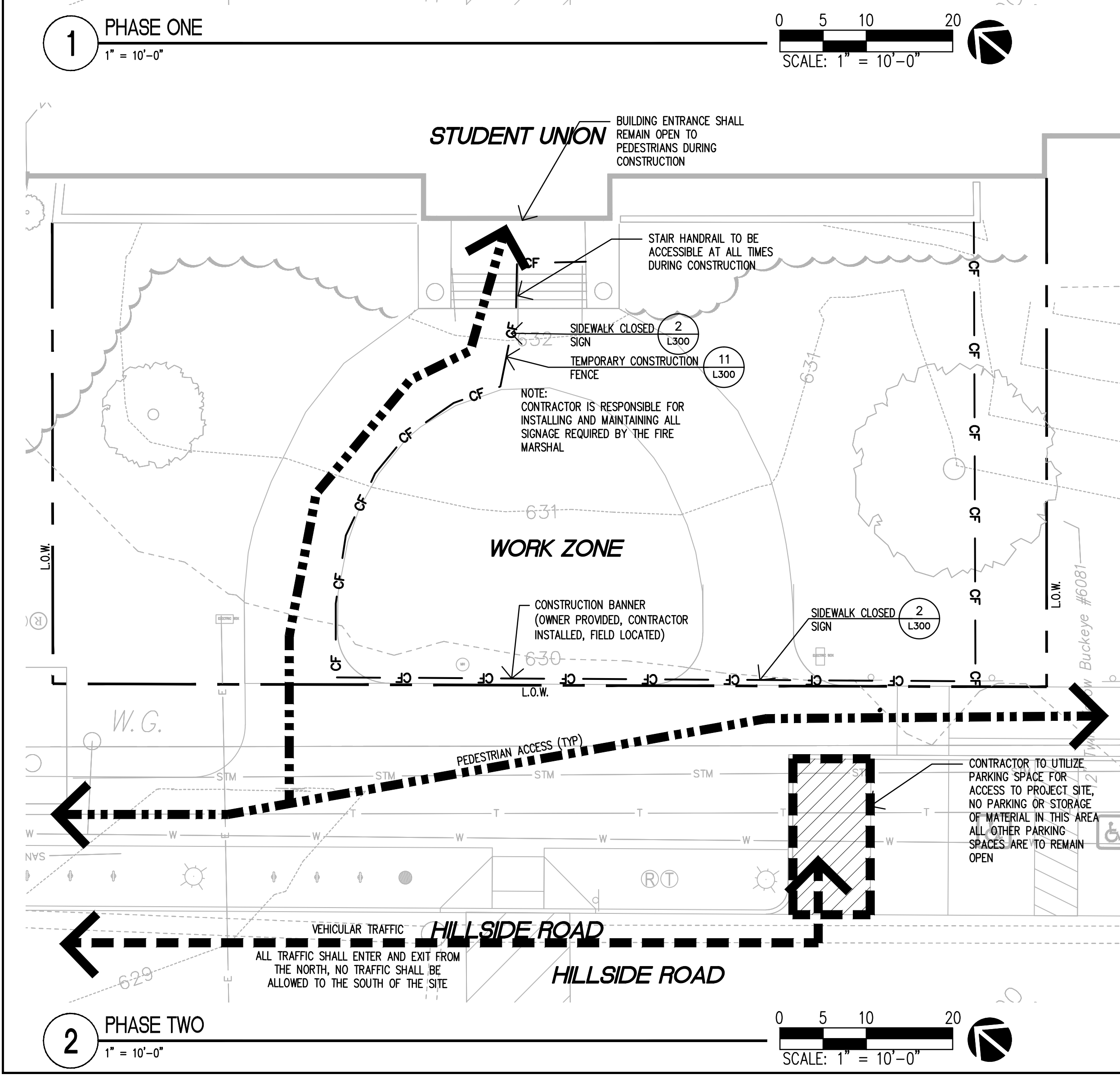
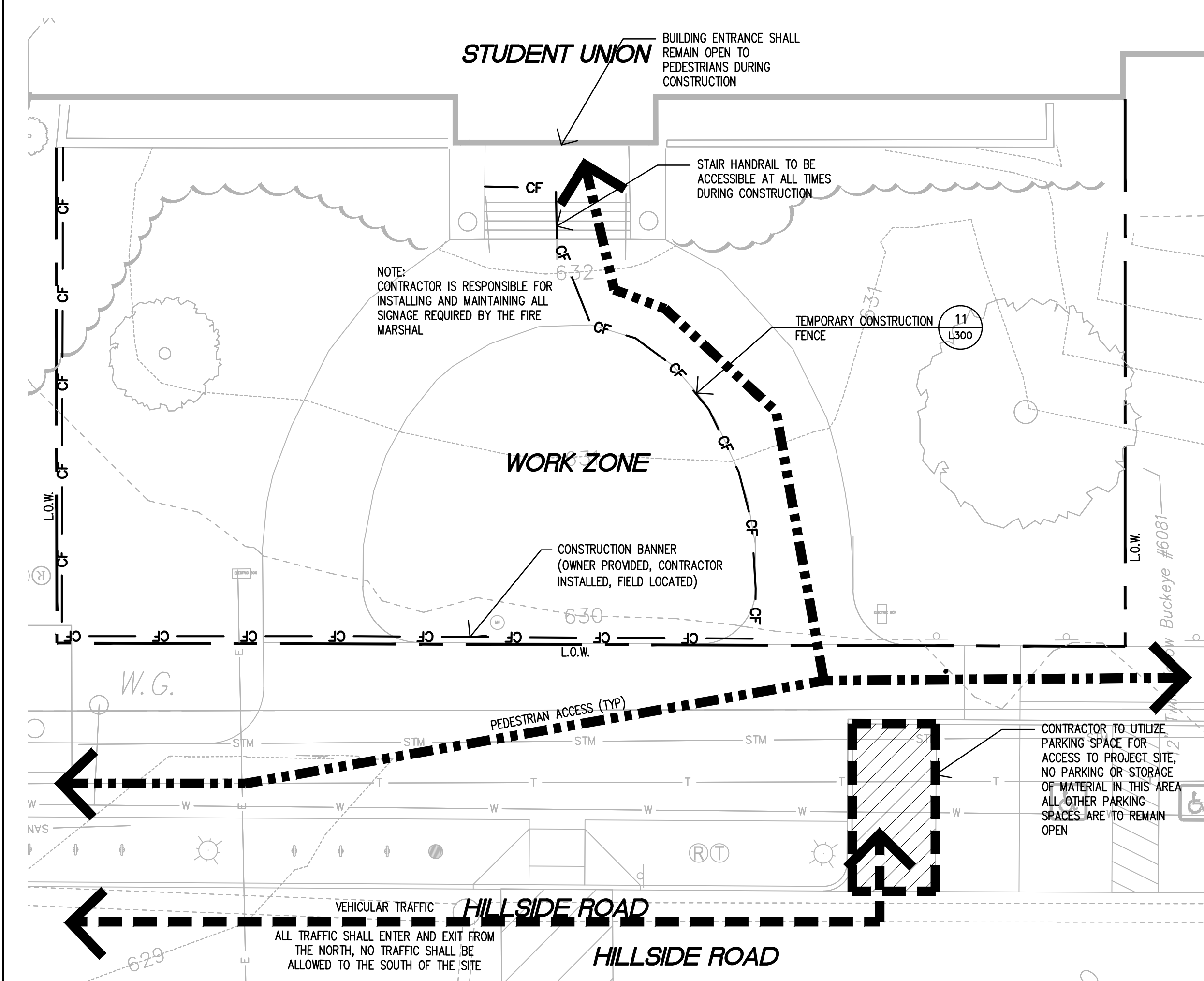
DRAWING INDEX

- COVER
- L100 - SITE LOGISTICS AND NOTES
- L200 - SITE PLAN
- L300 - DETAILS



PROJECT LOCATION





**SITE LOGISTICS NOTES:**

1. THIS PLAN SHOWS THE INTENT FOR THE CONSTRUCTION LOGISTICS. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING A FINAL LOGISTICS PLAN THAT THE UNIVERSITY SHALL APPROVE. THE FINAL LOGISTICS PLAN SHALL TAKE INTO ACCOUNT ALL THE REQUIREMENTS INDICATED IN THIS SET OF DOCUMENTS.
2. ALL AREAS OF WORK SHALL BE CLEANED, CLEARED AND FREE OF VISUAL CLUTTER TO THE UNIVERSITY'S SATISFACTION BY THE END OF EACH WORK DAY.
3. NO EQUIPMENT OR MATERIAL SHALL BE STORED OUTSIDE OF CONSTRUCTION FENCE.
4. DELIVERIES SHALL BE MADE BEFORE 8:00 AM OR AS AUTHORIZED BY THE UNIVERSITY TO MINIMIZE CONFLICT OF TRAFFIC AND PEDESTRIANS.
5. SIDEWALK CLOSED SIGNAGE SHALL BE UTILIZED TO SAFELY DIRECT PEDESTRIANS FIRST TO SIGNED CROSSWALKS.
6. PEDESTRIAN CLOSINGS SHALL BE TEMPORARILY CLOSED FOR NO MORE THAN FOUR HOURS. APPROPRIATE SIGNAGE SHALL BE USED TO ENSURE SAFE ROUTING OF PEDESTRIANS. TIMING SHALL BE COORDINATED WITH EVENT AND CLASS SCHEDULES.
7. ALL PRECAUTIONS SHALL BE TAKEN TO MAINTAIN A SAFE AND SECURED WORK AREAS.
8. UNIVERSITY FACILITIES SHALL NOT BE UTILIZED FOR STAGING CONSTRUCTION MATERIAL, EQUIPMENT, OR WORKERS.
9. ALL VEHICULAR ROADWAYS AND SERVICE DRIVES SHALL REMAIN OPEN TO VEHICULAR TRAFFIC DURING CONSTRUCTION.
10. ALL CONSTRUCTION TRAFFIC MUST HAVE A MINIMUM OF TWO FLAGGERS AT ALL TIMES.
11. ALL WORK SHALL BE COMPLETED BY HAND OR VIA MINI EXCAVATOR, OR WALK BEHIND SKID STEER. ALL EQUIPMENT SHALL BE APPROVED BY THE UNIVERSITY PRIOR TO MOBILIZATION.

**GENERAL NOTES:**

1. BOUNDARY AND TOPOGRAPHIC DATA WAS OBTAINED FROM DESIGN DOCUMENTS FROM PREVIOUS PROJECTS. THE LANDSCAPE ARCHITECT MAKES NO WARRANTY FOR INFORMATION SHOWN AS EXISTING. CONTRACTOR SHALL VERIFY CONDITIONS IN FIELD AND THEIR RELATIONSHIP TO NEW CONSTRUCTION. DISCREPANCIES SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE FOR RESOLUTION PRIOR TO COMMENCING WORK.
2. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE UNIVERSITY PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE. PRIOR TO THE REMOVAL OF ANY UTILITY, VERIFY THAT APPLICABLE NOTIFICATIONS HAVE BEEN MADE TO THE UTILITY OWNER/OPERATOR AND THAT THE UTILITY HAS BEEN PROPERLY TERMINATED, CAPPED, OR PLUGGED AS REQUIRED.
3. CONTRACTOR SHALL ESTABLISH AND/OR MAINTAIN AT LEAST ONE (1) BENCHMARK ON SITE FOR VERTICAL AND HORIZONTAL REFERENCE.
4. THE CONSTRUCTION LIMITS ARE AS DEFINED IN THE SPECIFICATIONS AND AS SHOWN IN THE DRAWINGS. DRAWINGS INDICATE MINIMUM LIMITS OF DEMOLITION/PAVEMENT REMOVAL REQUIRED FOR CONSTRUCTION OF NEW IMPROVEMENTS. WORK SHALL NOT EXCEED CONTRACT LIMIT LINES UNLESS PRIOR WRITTEN APPROVAL IS OBTAINED FROM THE OWNER'S REPRESENTATIVE.
5. ALL FENCING TO BE INSTALLED PRIOR TO ANY SITE DISTURBANCE. INSTALL TREE PROTECTION FENCE BEFORE INSTALLING CONSTRUCTION FENCE. CONSTRUCTION FENCE WITH GREEN SCRIM AND OWNER PROVIDED BANNERS AS SHOWN ON THE LOGISTICS PLAN TO BE KEPT UPRIGHT AND TIDY THROUGHOUT THE ENTIRE PROJECT.
7. THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY AND ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
8. CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE INSIDE AND OUTSIDE THE LIMIT OF WORK. CONTRACTOR SHALL RESTORE VEGETATIVE AREAS, INCLUDING THE REPLACEMENT OF DAMAGED TREES BASED ON THE UNIVERSITY'S ASSESSMENT OF THE DAMAGE.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFICATION OF THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION AND INVERTS AS REQUIRED. ALL EXISTING SURFACE AND SUBSURFACE UTILITIES, STRUCTURES AND SITE ELEMENTS TO REMAIN SHALL BE PROTECTED FROM DAMAGE. ANY DAMAGE TO EXISTING SITE ELEMENTS SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
10. CROSS REFERENCE AND COORDINATE WORK SHOWN ON ALL DRAWINGS IN THIS CONTRACT DOCUMENT SET.

**LAYOUT NOTES:**

1. LOCATION AND ALIGNMENT OF SITE IMPROVEMENTS SUCH AS FENCES, ETC. SHALL BE STAKED IN FIELD BY CONTRACTOR AND APPROVED BY THE OWNERS REP PRIOR TO CONSTRUCTION.
2. ALL DIMENSIONS ARE TO THE NEAREST FOOT UNLESS OTHERWISE NOTED. ALL ANGLES ARE 90° UNLESS OTHERWISE NOTED. ALL PROPOSED RADI ARE 5' RADIUS UNLESS OTHERWISE NOTED. DIMENSIONS ARE TO THE FACE OF CURB OR WALLS AND TO CENTERLINES OF PAVEMENT MARKINGS, DOORS AND LIGHT POLES EXCEPT WHERE OTHERWISE INDICATED.
3. ALL PAVEMENT CUTS IN CONCRETE ARE TO THE NEAREST JOINT - CONCRETE WALK PAVEMENT LIMITS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL INSTALL NEW WALK TO MATCH EXISTING COLOR AND TEXTURE TO THE GREATEST EXTENT POSSIBLE.
4. EMPLOY LICENSED SURVEYOR TO VERIFY AND LAYOUT LINES, DIMENSIONS AND ELEVATIONS. REPORT DISCREPANCIES TO OWNERS REP.

**PLANTING NOTES:**

1. ALL DISTURBED AREAS NOT COVERED BY STRUCTURES, PAVEMENTS, MULCHES, PLANTING BEDS OR TREE PITS SHALL BE SOODED LAWN.
2. CONTRACTOR SHALL SET PLANTS OUT IN FIELD FOR APPROVAL OF LOCATIONS BY ARCHITECT PRIOR TO PLANTING.
3. ALL PLANTING BEDS WITHIN THE PROJECT LIMITS SHALL RECEIVE A CLEAN OUT IN EDGE UNLESS NOTED TO RECEIVE STEEL EDGING. ALL TREES WITHIN THE PROJECT LIMITS SHALL RECEIVE A MULCH RING AS INDICATED ON THE PLANS.
4. ALL PLANTING BEDS AND PITS TO RECEIVE SPECIFIED MULCH TO DEPTHS SHOWN IN PLANTING DETAILS.
5. WHERE DISCREPANCIES OCCUR BETWEEN PLANTING QUANTITIES OR TYPES SHOWN ON PLAN AND IN THE PLANT LIST, THE QUANTITY OF PLANTINGS SHOWN ON PLAN SHALL PREVAIL.

**GRADING NOTES:**

1. BLEND PROPOSED GRADES INTO EXISTING GRADES SMOOTHLY AND NEATLY.
2. SEE SITE PLANTING PLANS FOR EXTENT AND REQUIRED DEPTH AND WIDTH OF CONTIGIOUS PLANTING BEDS.
3. PRIOR TO FINAL ACCEPTANCE THE CONTRACTOR SHALL PUMP ALL ON-SITE DRAINAGE STRUCTURE SUMPS OF SILT AND DEBRIS.
4. ALL ACCESSIBLE ROUTES SHOWN ON PLAN SHALL BE A MAXIMUM OF 1:12 (AT RAMPS) OR 1:20 (ALL OTHER AREAS) IN THE DIRECTION OF TRAVEL WITH A MAXIMUM OF 1:50 CROSS SLOPE.
5. EMPLOY A LICENSED SURVEYOR OR REGISTERED CIVIL ENGINEER TO VERIFY AND LAY OUT GRADES, LINES AND DIMENSIONS AS SHOWN ON DRAWINGS. SITE CONDITIONS TO BE VERIFIED IN THE FIELD. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REPORT DISCREPANCIES TO THE OWNER'S REPRESENTATIVE IMMEDIATELY AND RECEIVE INSTRUCTIONS PRIOR TO PROCEEDING WITH CONSTRUCTION.
6. THE CONTRACTOR SHALL VERIFY EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
7. RIM ELEVATIONS OF PROPOSED DRAINAGE AND UTILITY STRUCTURES SHALL BE FLUSH WITH SURROUNDING FINISHED GRADES.
8. EXCAVATE BY HAND IN PROXIMITY TO EXISTING UTILITIES AND STRUCTURES.
9. FINAL CONTOURING OF GRADES SHALL BE APPROVED IN THE FIELD BY OWNER'S REPRESENTATIVE.
10. PROPOSED GRADES INDICATE DESIGN INTENT. VERIFY ELEVATIONS AND MAKE ADJUSTMENTS TO MEET FIELD CONDITIONS AS APPROVED BY OWNER'S REPRESENTATIVE. PROVIDE POSITIVE DRAINAGE OFF WALKS AND AWAY FROM BUILDINGS.

**SITE PREPARATION NOTES:**

1. PRIOR TO ANY DEMOLITION ACTIVITY THE CONTRACTOR SHALL INSTALL ALL EROSION CONTROL MEASURES. SEE ENTIRE DOCUMENT SET FOR EROSION CONTROL PLANS & NOTES.
2. CONTRACTOR SHALL COORDINATE STAGING AREAS, FENCING, GATES, AND PARKING WITH OWNERS REP.
3. LIMITS OF EXISTING PAVEMENTS AND CURBS TO REMAIN SHALL BE NEATLY SAWCUT TO PROVIDE FOR A NEAT, CLEAN JOINT/OR FINISHED EDGE.
4. ALL SURFACE AND SUBSURFACE IMPROVEMENTS RELATED TO THE ITEMS DESIGNATED FOR REMOVAL SHALL ALSO BE REMOVED EXCEPT WHERE INDICATED OTHERWISE. REMOVAL OF TREES AND SHRUBS INCLUDES CLEARING AND GRUBBING OF STUMPS.
5. DEBRIS FROM DEMOLITION SHALL BE REMOVED FROM SITE AND DISPOSED OF PROPERLY BY CONTRACTOR.
6. CONTRACTOR SHALL VERIFY ALL ITEMS TO BE REMOVED AND TO REMAIN WITH OWNERS REP BEFORE COMMENCING ANY DEMOLITION WORK.
7. ITEMS NOTED TO BE STOCKPILED FOR OWNER SHALL BE STORED ON-SITE AND PROTECTED BY CONTRACTOR UNTIL RECOVERY BY OWNER. ITEMS NOTED FOR RELOCATION SHALL BE REMOVED, STORED AND PROTECTED FROM DAMAGE UNTIL RE-INSTALLATION. STORED ITEMS DAMAGED BY CONTRACTOR SHALL BE REPLACED IN KIND BY CONTRACTOR.
8. ALL SAWCUTS SHALL BE STRAIGHT AND CLEAN.

**EROSION AND SEDIMENT CONTROL NOTES:**

1. CONSTRUCTION EROSION SEDIMENTATION CONTROL MEASURES SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL."
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL EROSION CONTROL MEASURES ARE CONFIGURED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO THE RESOURCE AREAS AND PROPERTIES ADJACENT TO THE CONSTRUCTION SITE. ACTUAL SITE CONDITIONS OR SEASONAL AND CLIMATIC CONDITIONS MAY WARRANT ADDITIONAL CONTROLS OR CONFIGURATIONS AS DIRECTED BY THE OWNERS REP.
3. WEEKLY AND POST-RAIN (>0.1-INCH RAINFALL WITHIN 24 HOURS) INSPECTIONS SHALL BE CONDUCTED ON ALL EROSION AND SEDIMENTATION MEASURES INSTALLED BY THE CONTRACTOR.
4. AFTER EROSION AND SEDIMENTATION CONTROLS ARE IN PLACE, THE CONTRACTOR MAY MOBILIZE DEMOLITION OR CONSTRUCTION AS REQUIRED. ALL STOCKPILED MATERIAL SHALL BE SUBJECT TO EROSION CONTROL DEVICES THAT SHALL INCLUDE A MINIMUM OF SILT FENCE WITH HAY BALE SUPPORT AND STOCKPILE COVERS. OTHER METHODS MAY INCLUDE MULCHING OR OTHER METHODS THAT PREVENT EROSION CONDITIONS.
5. TEMPORARY SEEDING OR NON-LIVING SOIL PROTECTION OF ALL EXPOSED SOILS SHALL BE INITIATED WITHIN THE FIRST 7 DAYS OF SUSPENDING WORK IN AREAS TO BE LEFT LONGER THAN 30 DAYS.
6. SEPARATE NON-LIVING SOIL PROTECTION MEASURES FOR AREAS THAT ARE SEEDING FOR AREAS THAT CANNOT BE SEEDING DUE TO WEATHER OR SEASONAL CONDITIONS.
7. ALL TEMPORARY SLOPES IN EXCESS OF 3(HOR) TO 1 (VERT) SHALL BE STABILIZED WITH SPECIFIED MATTING, OR APPROVED EQUIVALENT.
8. NO RUNOFF SHALL BE ALLOWED TO EXIT THE SITE PRIOR TO TREATMENT FOR SEDIMENT REMOVAL.
9. THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AND SHALL NOT ALLOW THE ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS ON THE SITE. ALL TRASH SHALL BE CLEANED ON A DAILY BASIS AND THE JOB SITE SHALL BE LEFT IN A NEAT CONDITION AT THE END OF EACH DAY. APPROVED SANITARY FACILITIES SHALL BE MAINTAINED ON-SITE AT ALL TIMES. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS ON THE CONSTRUCTION SITE AND SHALL ADHERE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION AND EMERGENCY RESPONSE.
10. THE CONTRACTOR SHALL BE PREPARED AT ALL TIMES TO SWEEP ADJACENT ROADWAYS IF MUD OR SOIL IS TRACKED ON TO THEM, OR AS DIRECTED BY THE UNIVERSITY REPRESENTATIVE.
11. ALL EROSION CONTROL DEVICES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
12. CONSTRUCTION ENTRANCE(S) SHALL BE LOCATED AS SHOWN ON THE PLANS, OR AS FIELD DIRECTED BY THE OWNERS REP.
13. ALL EXISTING STORM STRUCTURES SHALL BE FITTED WITH CATCH BASIN FILTER BASKETS. EXISTING STRUCTURES TO BE REMOVED SHALL HAVE FILTER BASKETS UNTIL THEY ARE REMOVED.

**GENERAL LEGEND**

- LIMIT OF WORK
- - - SAWCUT LINE
- BENCH
- BIT BITUMINOUS
- CLF CHAIN LINK FENCE
- L.O.W. LIMIT OF WORK
- CONC. CONCRETE
- N.I.C. NOT IN CONTRACT

**SITE PREPARATION LEGEND**

- CONC. PAVEMENT TO BE REMOVED
- CF CONSTRUCTION FENCE
- X TREE TO BE REMOVED
- P TREE PROTECTION

**SITE MATERIALS LEGEND**

- CONCRETE PAVEMENT (1 L300)
- CONCRETE PAVERS (2 L300)
- € CENTER LINE
- DIA. DIAMETER
- EJ EXPANSION JOINT
- EQ. EQUAL
- MAX. MAXIMUM
- MIN. MINIMUM
- R. RADIUS
- (TYP.) TYPICAL CONDITION
- ALIGN

**SITE GRADING LEGEND**

- DIRECTION OF SURFACE DRAINAGE FLOW
- 123 PROPOSED INTERMEDIATE CONTOUR
- 120 PROPOSED INDEX CONTOUR
- TW 123.45 / BW 122.45 PROPOSED SPOT ELEVATION
- FLUSH CONDITION
- BC BOTTOM OF CURB
- BFE BASEMENT FLOOR ELEVATION
- BS BOTTOM OF STAIR
- BW BOTTOM OF WALL
- CB CATCH BASIN
- DI DRAIN INLET
- EL. ELEVATION
- FFE FINISH FLOOR ELEVATION
- FLUSH FLUSH CONDITION
- HP HIGH POINT
- LP LOW POINT
- MEG MATCH EXISTING GRADE
- TC TOP OF CURB
- TF TOP OF FRAME
- TRC TRANSITION CURB
- TS TOP OF STAIR
- TW TOP OF WALL
- YD YARD DRAIN
- LT LIGHTPOLE

**SITE PLANTING LEGEND**

- ORNAMENTAL TREE
- SHRUB PLANTINGS
- GROUND COVER
- QUANTITY
- PLANT TYPE KEY
- B&B BALLED & BURLAPPED
- CAL CALIPER AT 4' HT.
- CONT. CONTAINER
- GAL GALLON CONTAINER
- HT. HEIGHT
- O.C. ON CENTER
- PT. PINT CONTAINER
- QTY QUANTITY
- SPD SPREAD

CERTIFICATION:

STATUS: BID DOCUMENTS

CONSULTANT:

REVISIONS:

MARK	DATE	DESCRIPTION

UNIVERSITY OF CONNECTICUT  
OFFICE OF PLANNING, ARCHITECTURAL AND  
ENGINEERING SERVICES  
31 LEDOYT ROAD UNIT 3038  
STORRS, CONNECTICUT 06269-3038  
TELEPHONE: (860) 486-3127  
FACSIMILE: (860) 486-3177

PROJECT:

STUDENT UNION  
SENIOR SQUARE  
2110 Hillside Road  
Storrs CT. 06269

PROJECT NO: 201462

WORK ORDER NO:

FILE NAME: \\PLANNING\LANDSCAPE\PLANNING\OUPROJECTS\201462-SENIOR SQUARE\WORKING\ACAD\SITE\L200

CHECKED: SMV

DRAWN: IPD

SCALE: As Noted

PRINT DATE: 05/11/2015

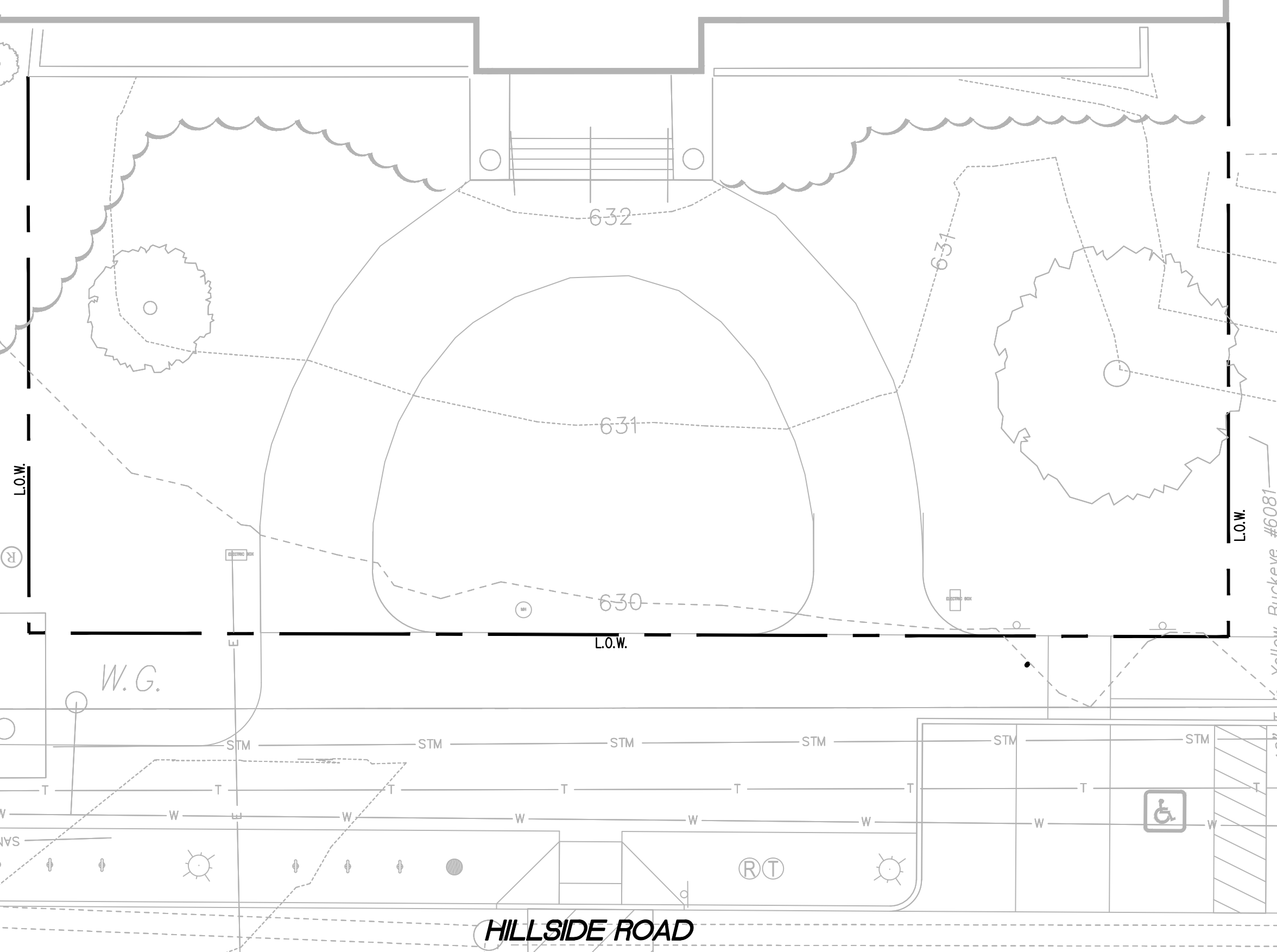
SHEET TITLE:

SITE LOGISTICS AND NOTES

SHEET:

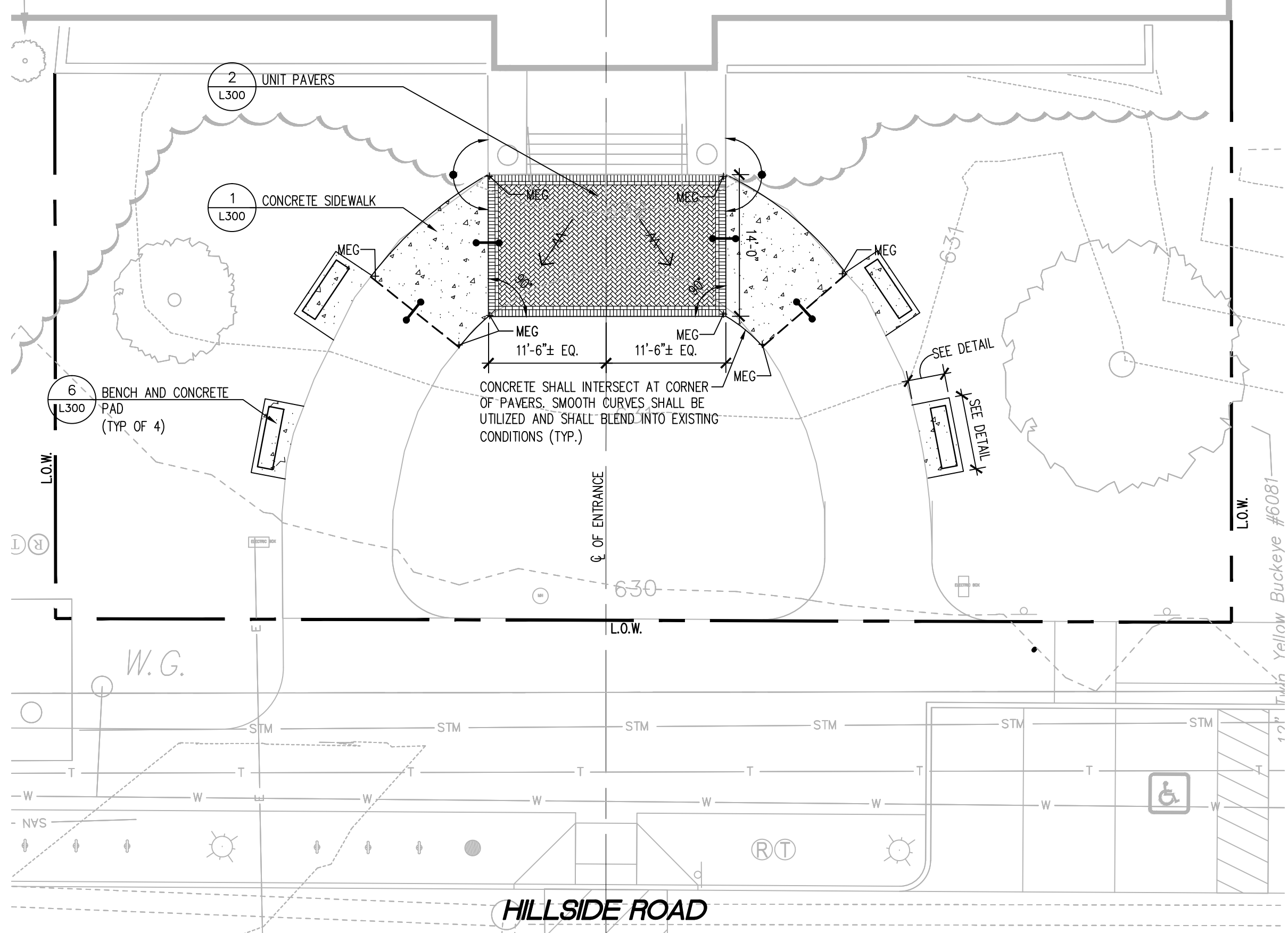
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**STUDENT UNION**



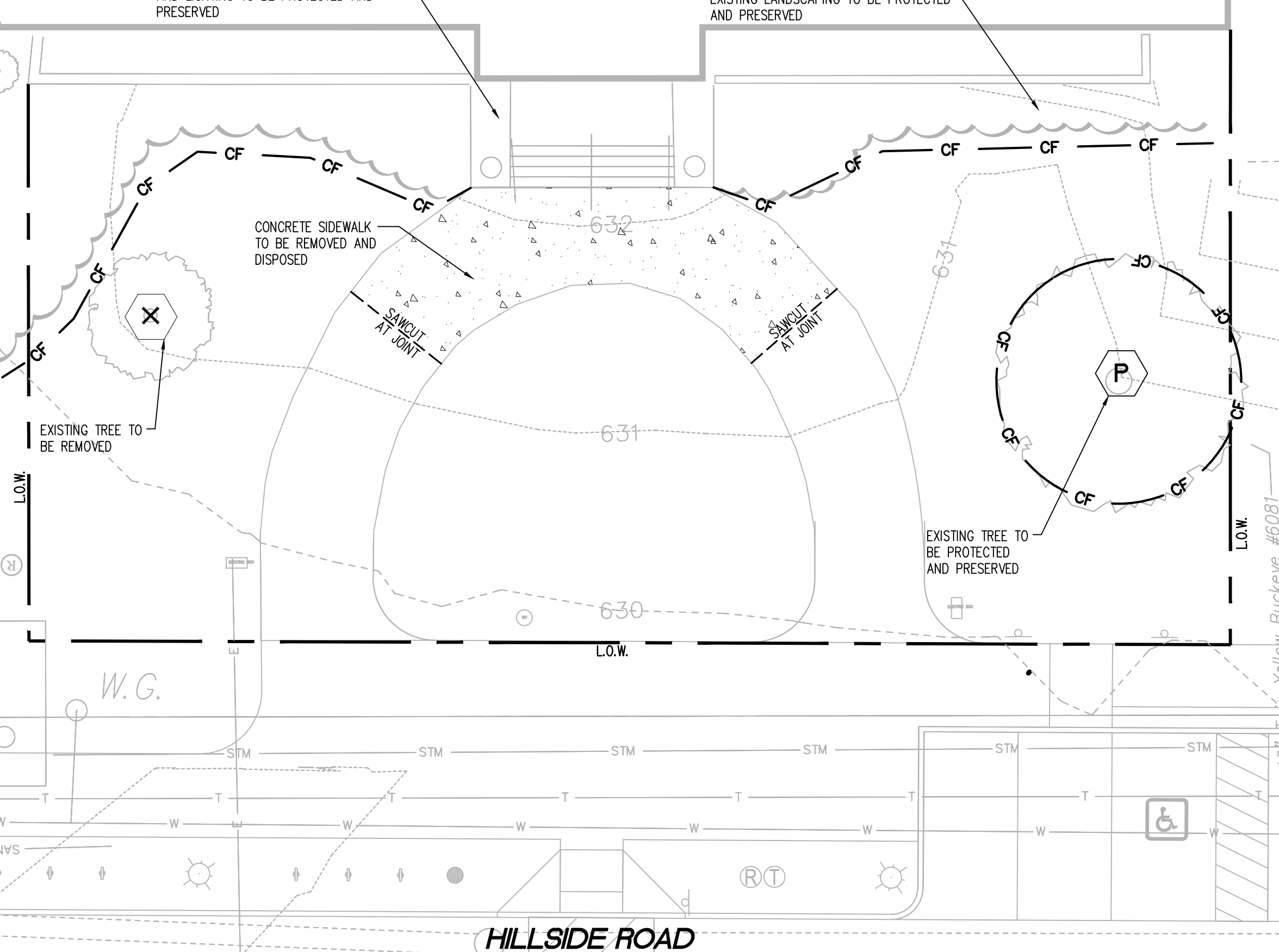
**1** EXISTING CONDITIONS  
1" = 10'-0"  
SCALE: 1" = 10'-0"

**STUDENT UNION**



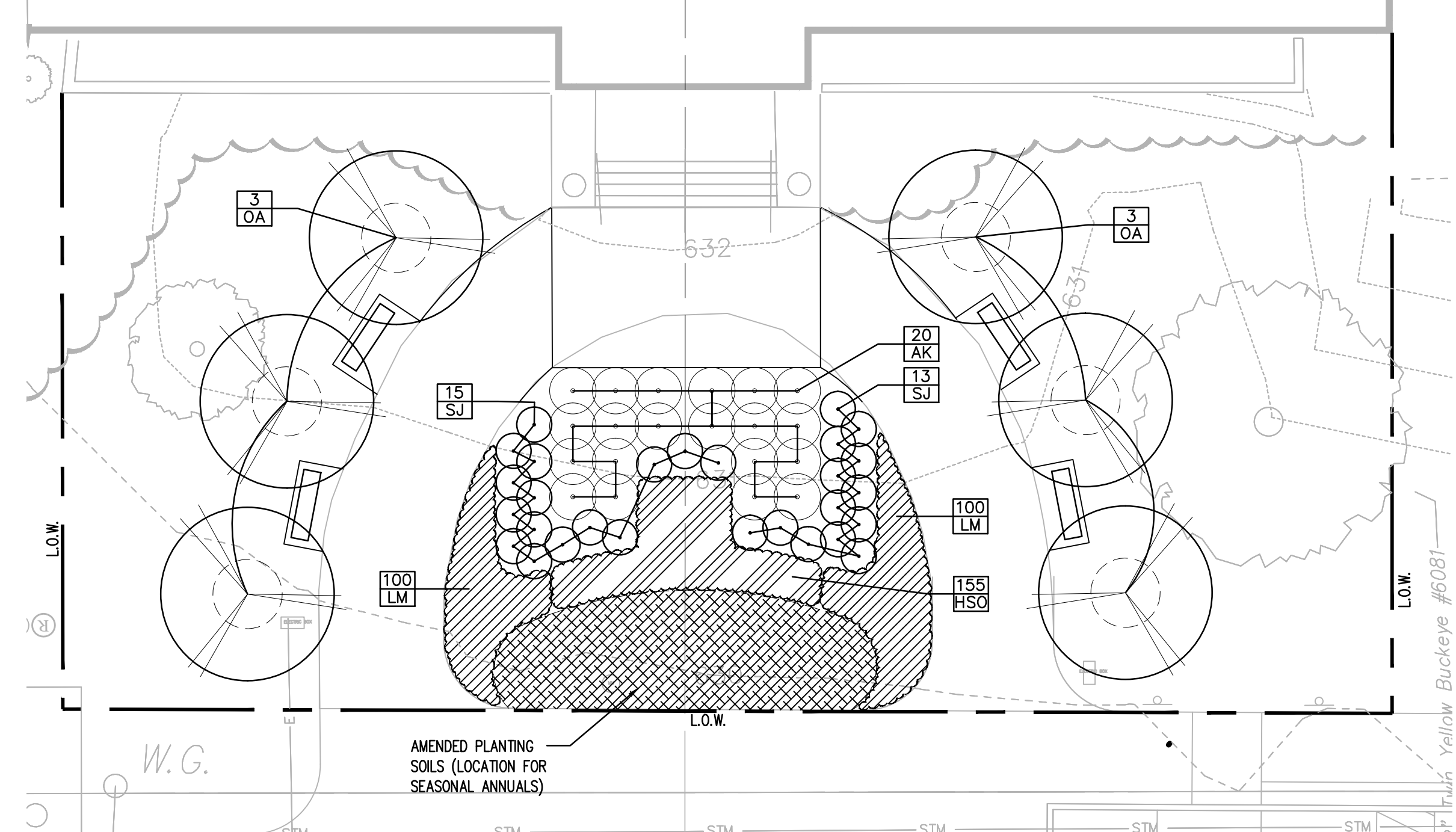
**3** MATERIAL, LAYOUT, AND GRADING PLAN  
1" = 10'-0"  
SCALE: 1" = 10'-0"

**STUDENT UNION**



**2** DEMOLITION AND PREPARATION PLAN  
1" = 10'-0"  
SCALE: 1" = 10'-0"

**STUDENT UNION**



**4** PLANTING PLAN  
1" = 10'-0"  
SCALE: 1" = 10'-0"

PLANT MATERIAL LIST						
QTY.	KEY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENT
6	SR	SYRINGA RETICULATA 'SUMMER SNOW'	SUMMER SNOW TREE LILAC	2.5"-3" CAL.	B&B	STRONG LEADER, WELL SHAPED, MATCHING SPECIMANS
24	AK	AZALEA X 'KAREN'	KAREN AZALEA	30"-36" HT.	CONT.	DENSE BRANCHING, WELL ROOTED IN POT, STURDY STEMS, GOOD COLOR
155	HSO	HEMEROCALLIS 'STELLA DE ORO'	STELLA DE ORO DAYLILY	#2 POT	CONT.	WELL ROOTED IN POT, GOOD GROWTH AND COLOR, 12" O.C.
200	LM	LIRIOPE MUSCARI 'BIG BLUE'	BIG BLUE LILY TURF	#2 POT	CONT.	WELL ROOTED IN POT, GOOD GROWTH AND COLOR, 12" O.C.
28	SJ	SPIRAEA JAPONICA 'NEON FLASH'	NEON FLASH SPIREA	18"-24" HT	CONT.	DENSE BRANCHING, WELL ROOTED IN POT, STURDY STEMS, GOOD COLOR

CERTIFICATION:

STATUS: **BID DOCUMENTS**

CONSULTANT:

REVISIONS:

MARK	DATE	DESCRIPTION

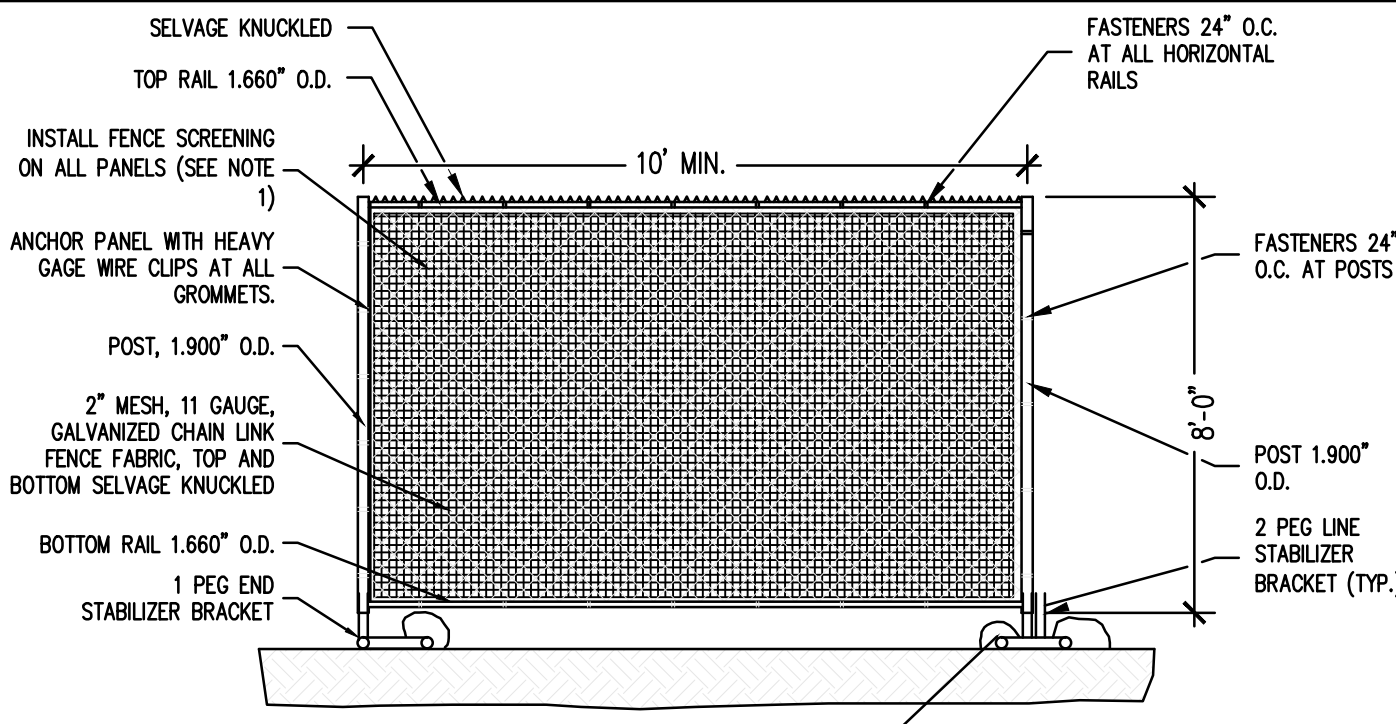
UNIVERSITY OF CONNECTICUT  
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SHEET TITLE:  
**SITE PLANS**

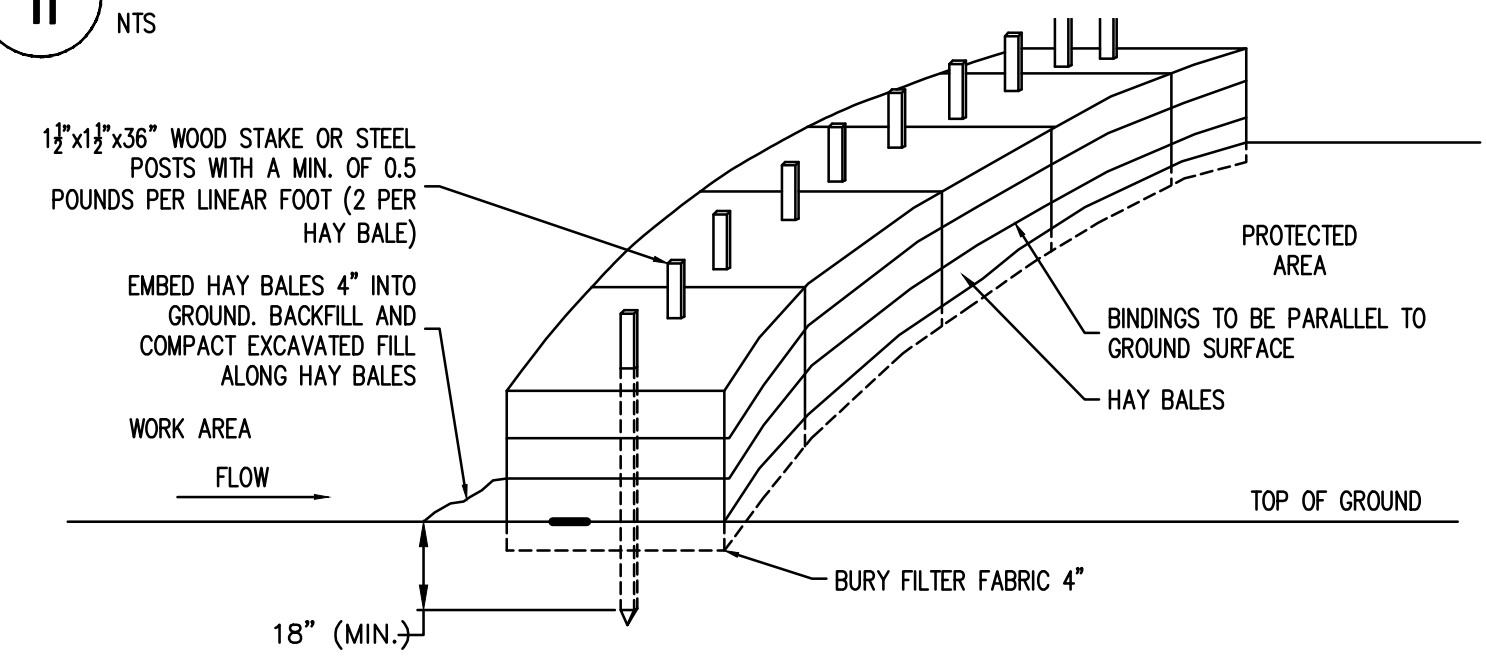
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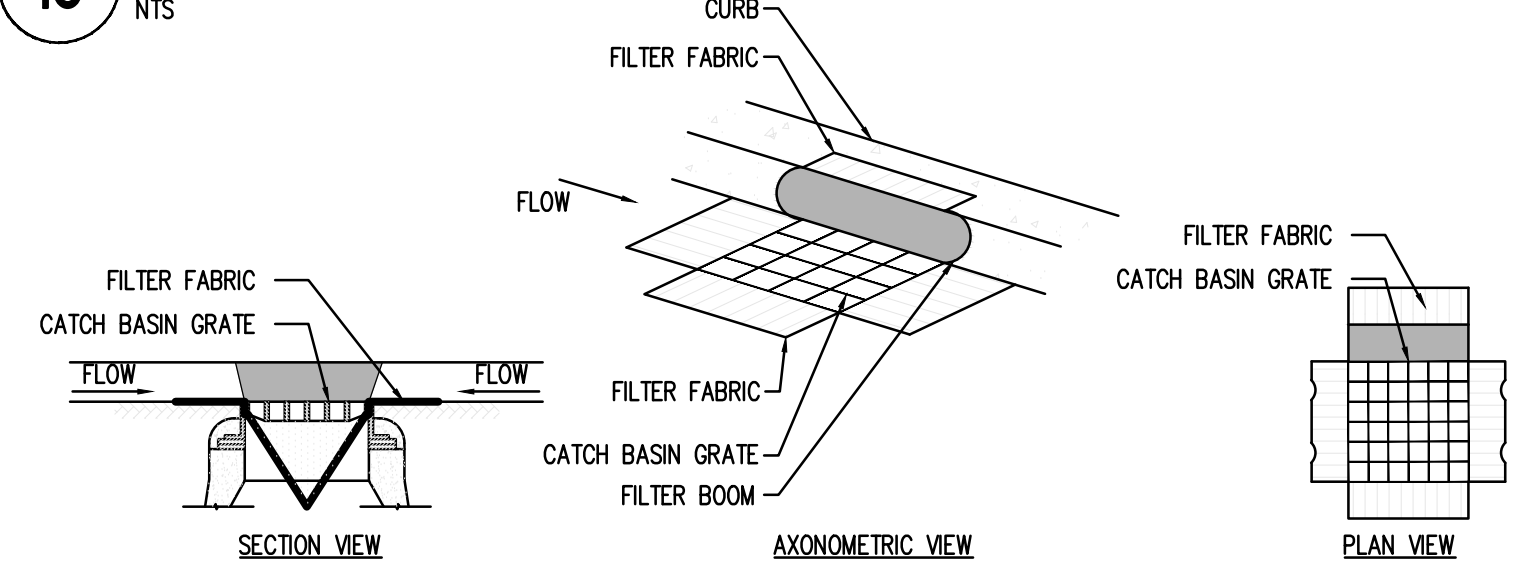
- NOTES:**
- FENCE SCREENING PER SPECIFICATION SECTION 01 5000, BASS (TYP.)
  - EACH STABILIZER BRACKET SHALL BE SECURED WITH TWO (2) SANDBAGS, MIN. 50 POUNDS EACH. SANDBAGS SHALL BE ON THE INTERIOR OF THE FENCE
  - PANELIZED CONSTRUCTION FENCE SHALL ONLY BE USED AT CONSTRUCTION SITE ENTRANCE AREAS, AREAS REQUIRING FREQUENT RELOCATION OF FENCING, OR WHERE PAVED AREAS PROHIBIT INSTALLATION OF EMBEDDED FENCE POSTS.
  - CONTRACTOR SHALL UTILIZE INTERIOR BRACING TO ENSURE FENCE REMAINS UPRIGHT DURING WINDY CONDITIONS
  - ALL PANELS SHALL BE NEW AND FREE OF DEFECTS, THE UNIVERSITY RESERVES THE RIGHT TO REJECT ANY PART OF THE FENCE

**11 PANELIZED FENCE TEMPORARY CONSTRUCTION FENCE**



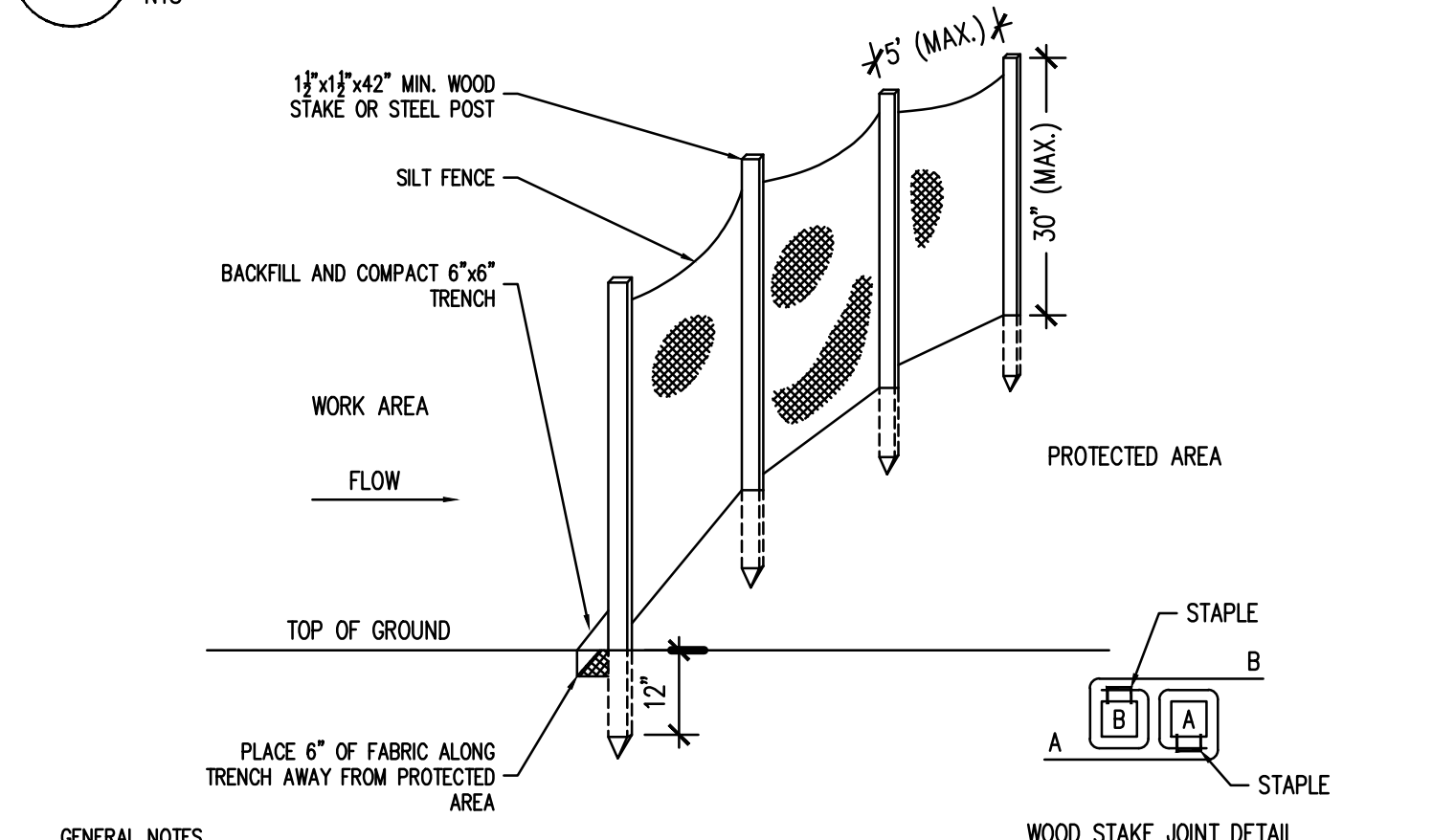
- GENERAL NOTES:**
- HAY BALES SHALL BE MADE OF HAY OR STRAW WITH 40 POUND MIN. WEIGHT AND 120 POUND MAX. WEIGHT HELD TOGETHER BY TWINE OR WIRE.
  - PLACE HAY BALES ON CONTOUR AND WING THE LAST HAY BALES UP SLOPE SO THAT THE TOP OF THE LAST SEVERAL HAY BALES ARE HIGHER THAN THE LINE OF HAY BALES.
  - DRIVE FIRST STAKE IN EACH BALE TOWARD THE PREVIOUSLY LAID BALE TO FORCE THEM TOGETHER.
  - PUT ONE HAY BALE PERPENDICULAR ALONG HAY BALE BARRIER EVERY 100 FEET.

**10 HAY BALE BARRIER**



- NOTES:**
- PROVIDE INLET PROTECTION TO ALL EXISTING CATCH BASINS IN THE VICINITY OF CONSTRUCTION.
  - GRATE TO BE PLACED OVER FILTER FABRIC.

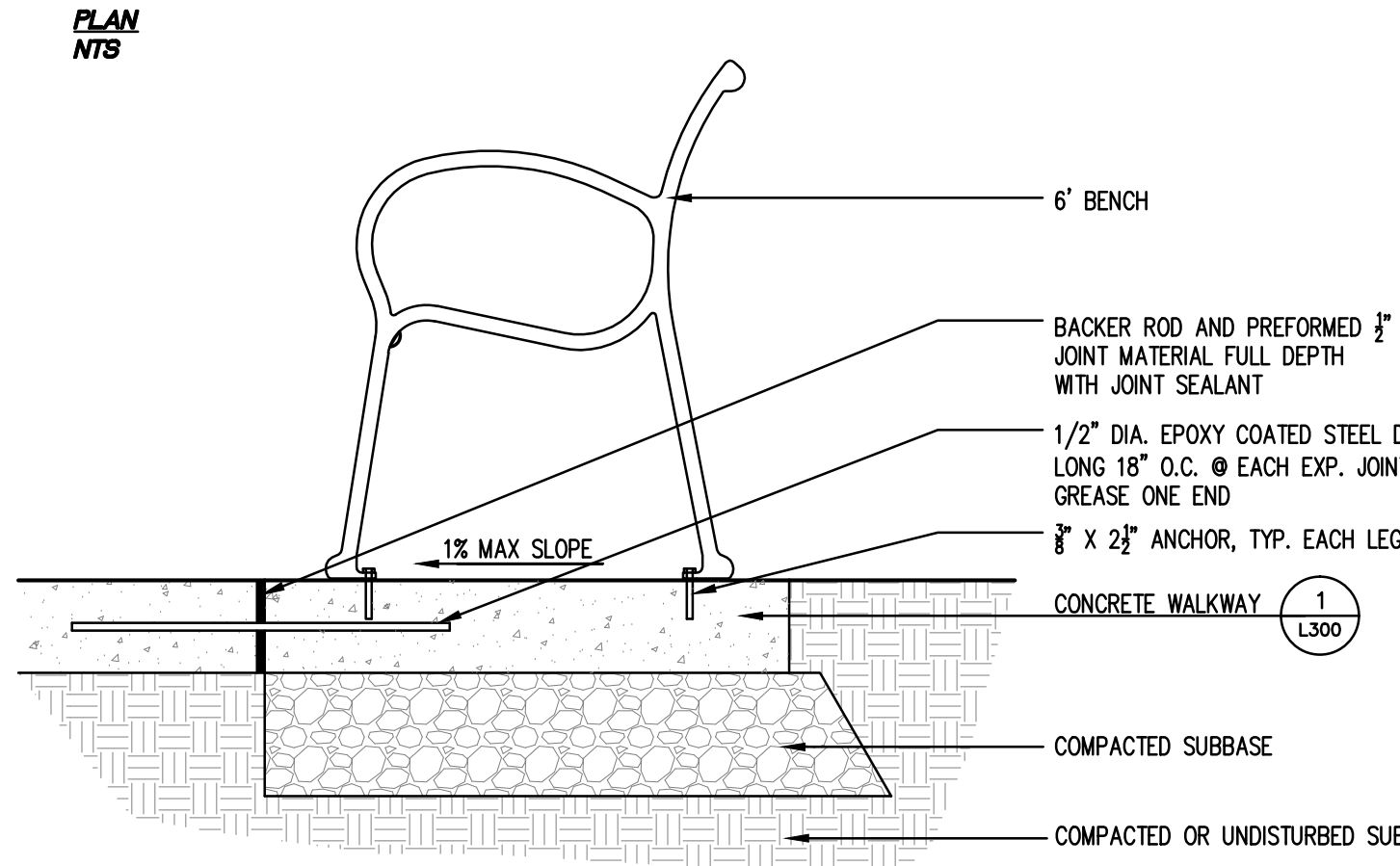
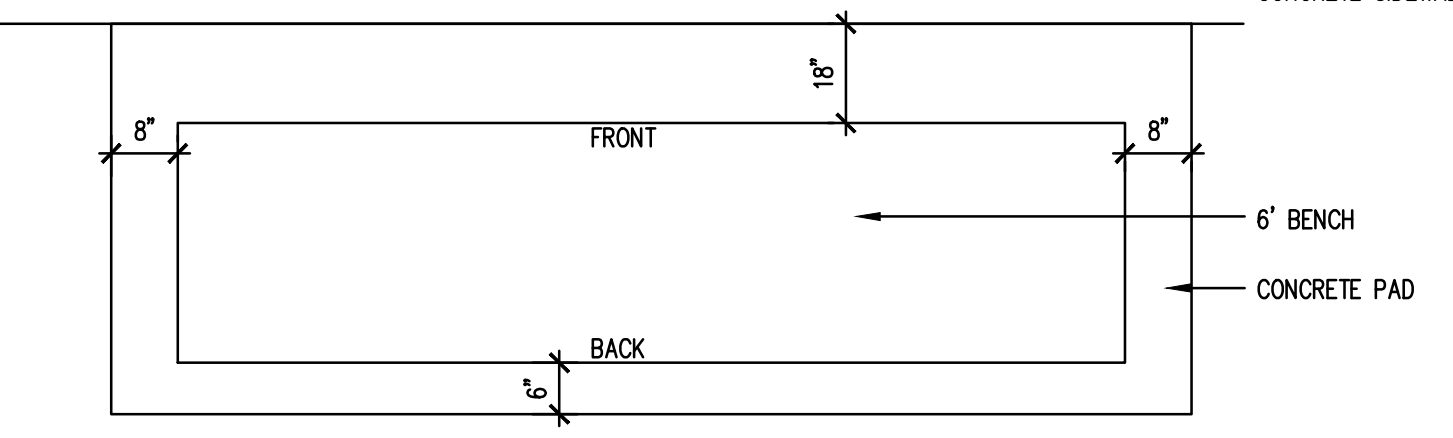
**9 CATCH BASIN FILTER BASKET**



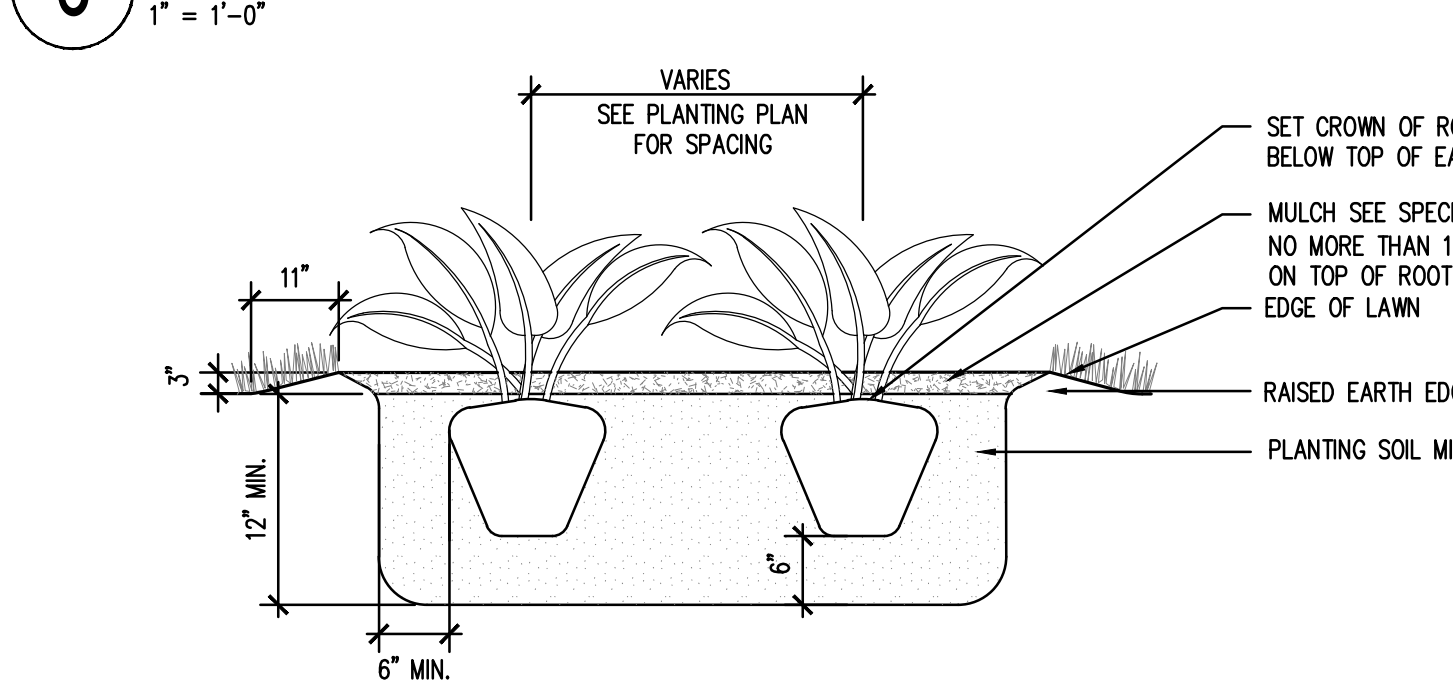
- GENERAL NOTES:**
- FOR SLOPE & SWALE INSTALLATIONS, EXTEND FENCE UP SLOPE SUCH THAT BOTTOM ENDS OF FENCE WILL BE HIGHER THAN THE TOP OF THE LOWEST PORTION OF FENCE.
  - FOR FENCE INSTALLED ON LEVEL TERRAIN INSTALL WING SECTIONS PERPENDICULAR TO MAIN BARRIER AT 50'-100' INTERVALS.

**8 SILTY FENCE BARRIER**

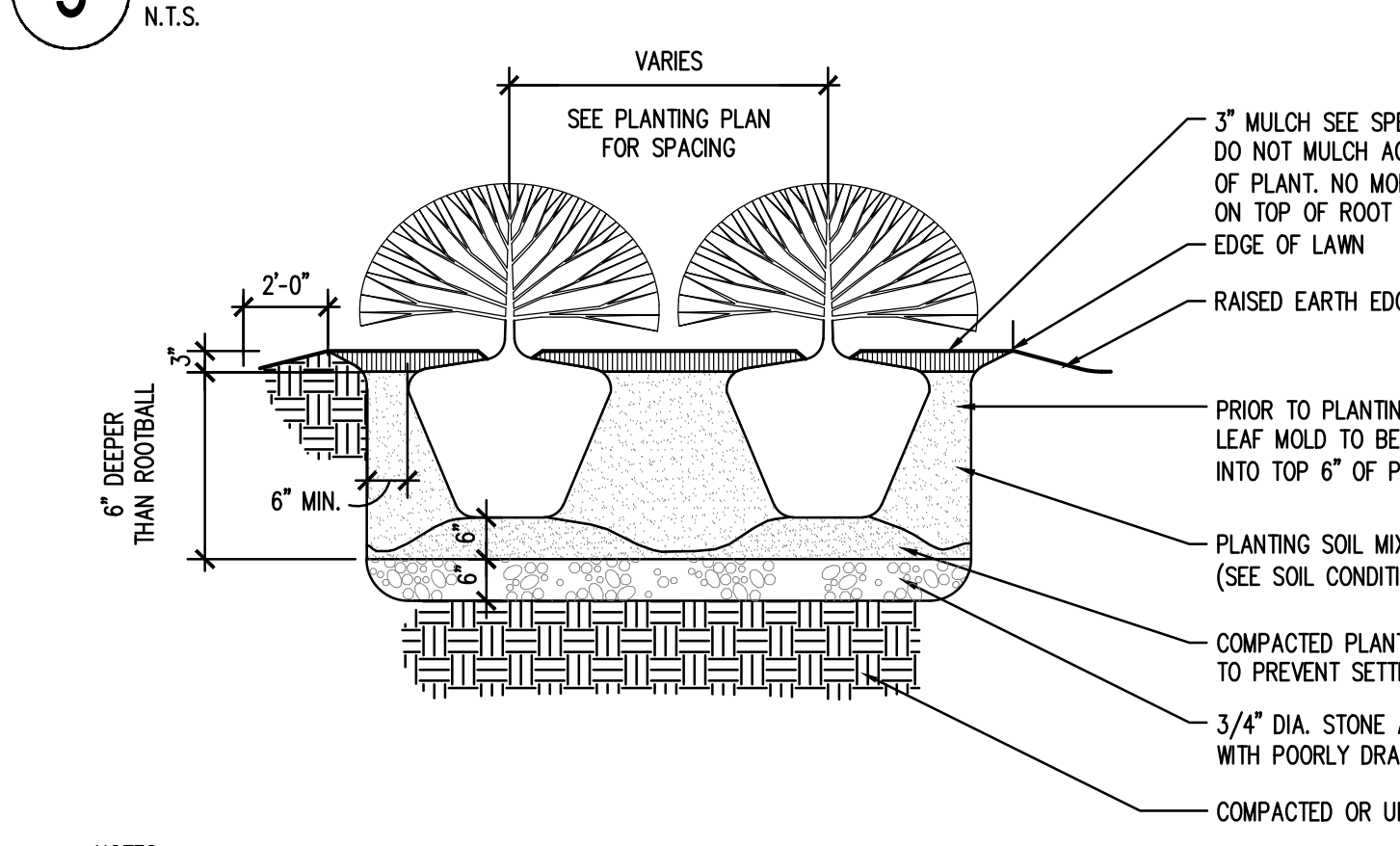
**7 SODDED LAWN**



**6 BENCH AT CONCRETE PAD**

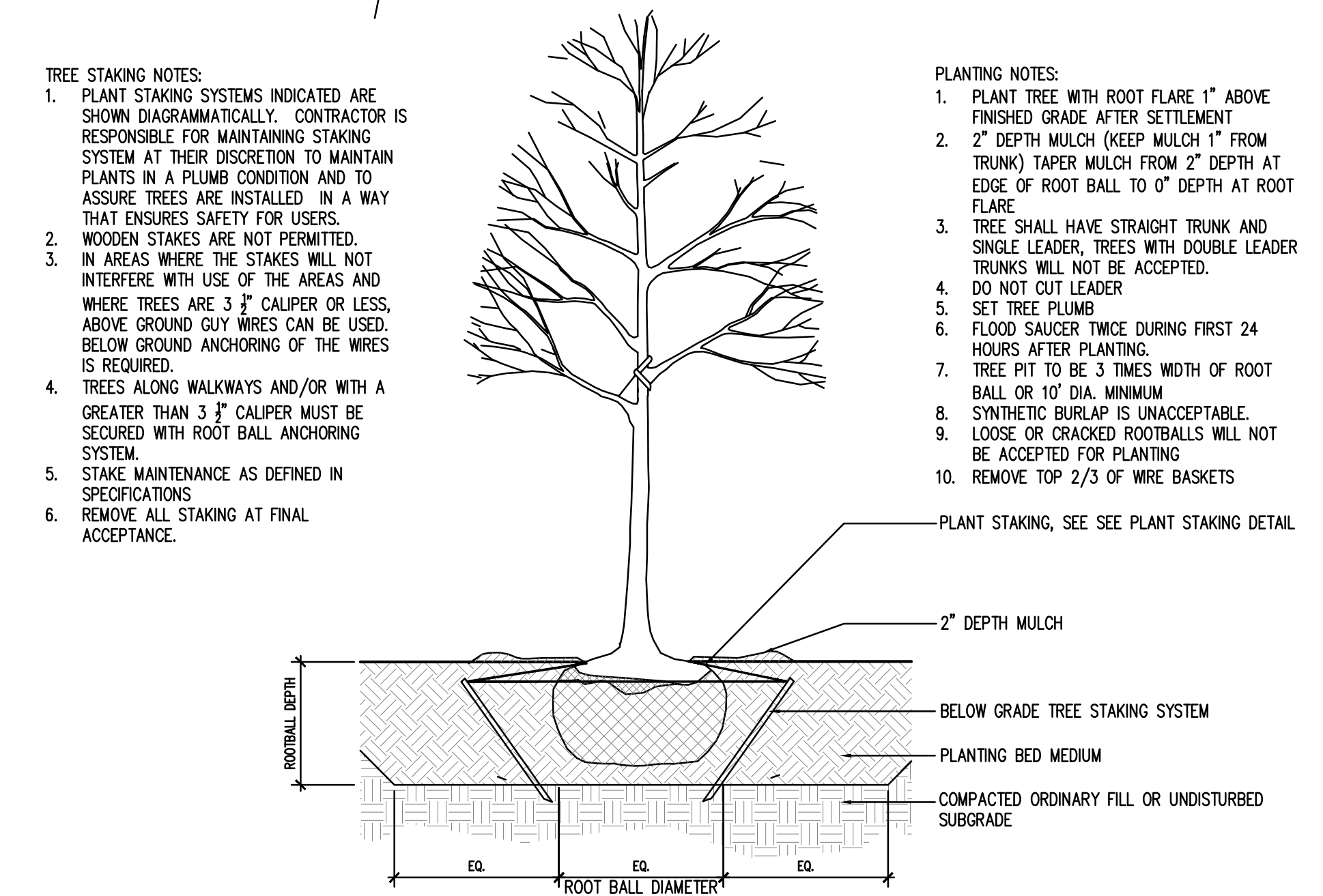


**5 PERENNIAL PLANTING**

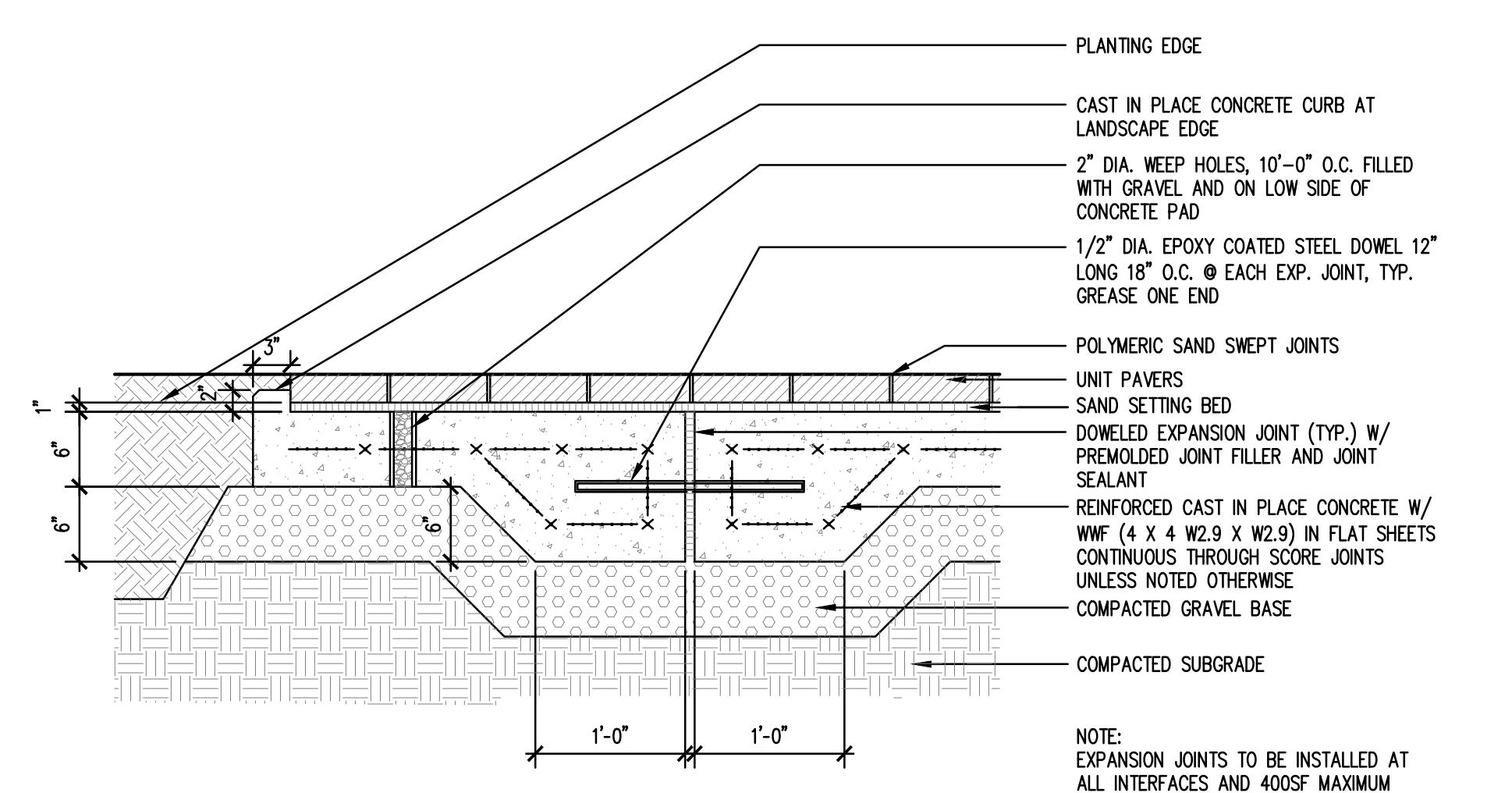
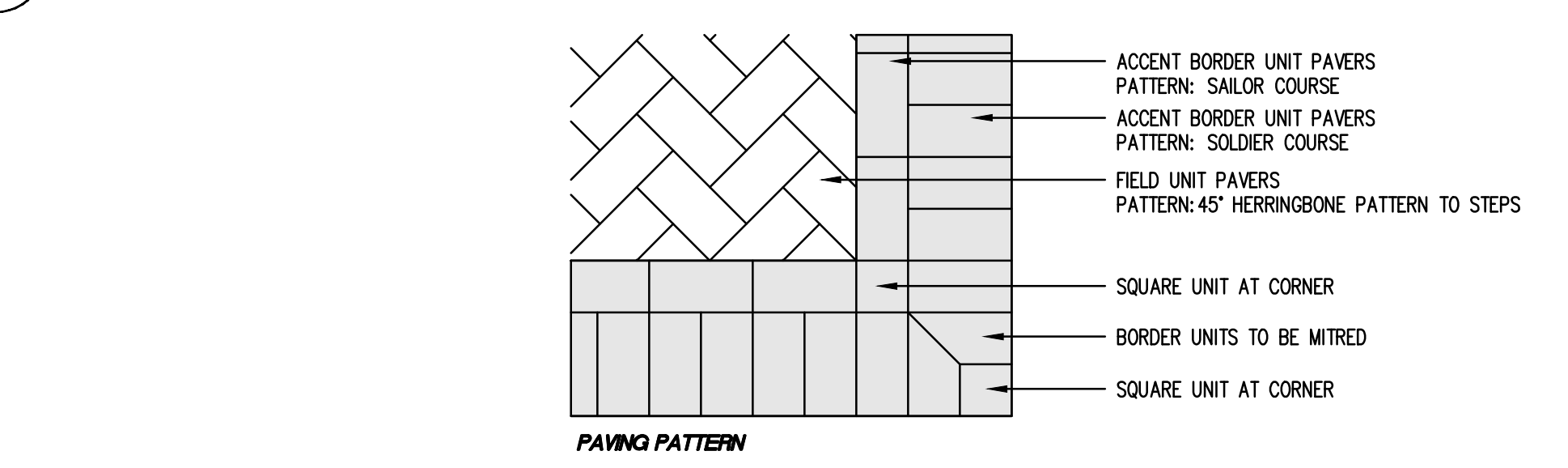


- NOTES:**
- FOR CONTAINER GROWN SHRUBS, GENTLY PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF CONTAINER.
  - FOR B&B SHRUBS, FOLD BURLAP FROM TOP OF ROOT BALL DOWN TO GROUND.
  - INCORPORATE COMMERCIALY PREPARED MYCORRHIZA SPORES IN THE SOIL IMMEDIATELY AROUND THE ROOT BALL AT RATES SPECIFIED BY THE MANUFACTURER.
  - CONFIRM THAT WATER DRAINS OUT OF THE SOIL DURING THE DESIGN PHASE, DESIGN ALTERNATIVE DRAINAGE SYSTEMS, AS REQUIRED.

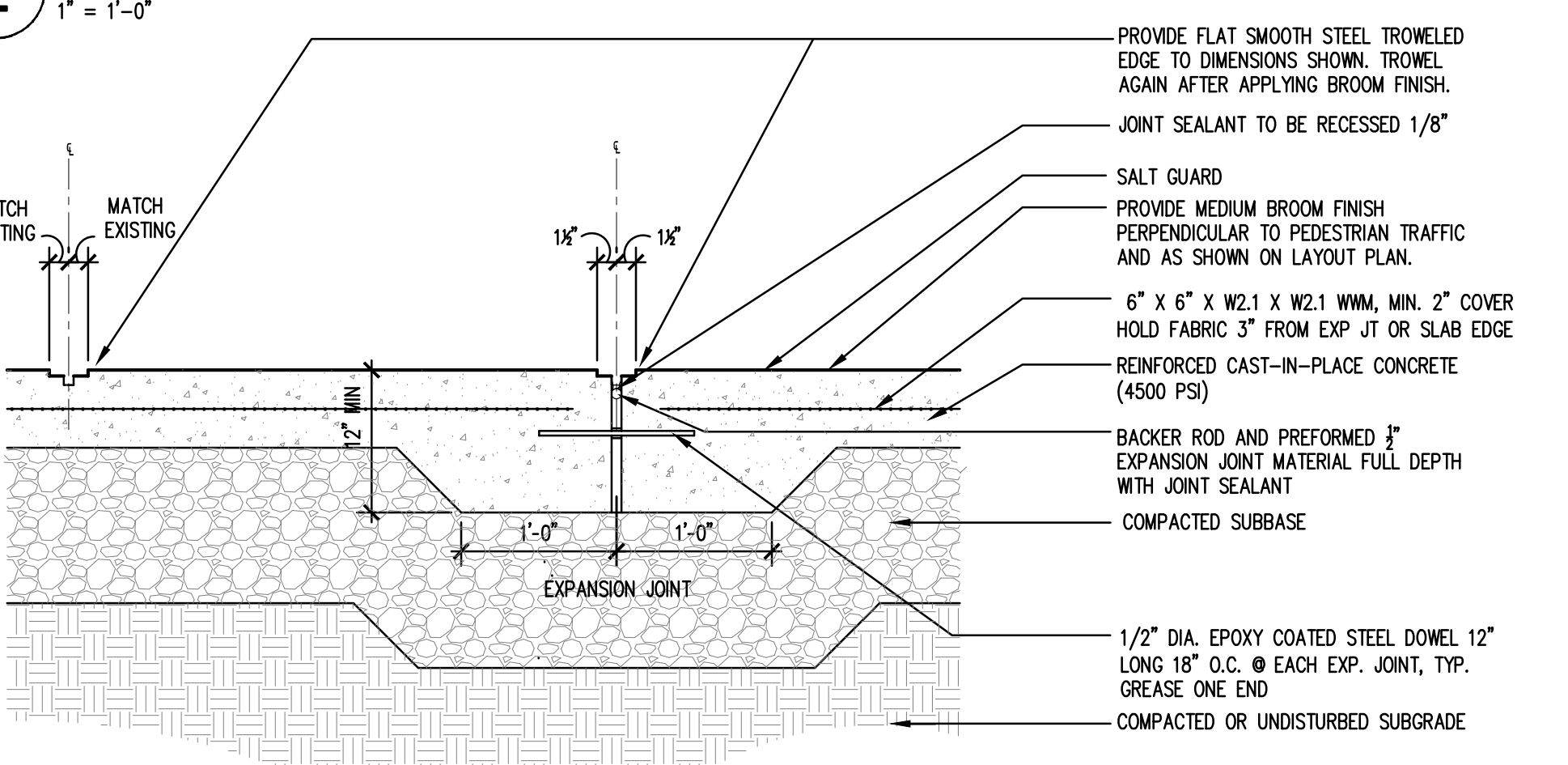
**4 SHRUB PLANTING**



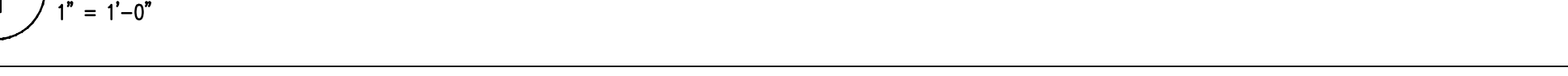
**10 TREE PLANTING**



**2 UNIT PAVERS ON CONCRETE FOUNDATION**



**1 CONCRETE WALKWAY**



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PROJECT:

STUDENT UNION SENIOR SQUARE  
2110 Hillside Road  
Storrs CT. 06269

PROJECT NO: 201462  
WORK ORDER NO:  
FILE NAME: 13-PLANNING/LANDSCAPE PLANNING/OUTPROJECTS/201462 - SENIOR SQUARE/WORKING/ACAD/STUE/L300

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DRAWN: IPD  
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SHEET TITLE:

DETAILS

SHEET:

L300