

DELAWARE STATE UNIVERSITY

***SPECIFICATIONS
FOR***

***EDUCATION AND HUMANITIES CENTER
BLDG 32***

FIRE ALARM REPLACEMENT

IN

DOVER, DELAWARE

PREPARED

BY

DELAWARE ENGINEERING & DESIGN CORPORATION

NEWARK, DELAWARE

DEDC PROJECT# 11P175

ISSUED FOR BID

NOVEMBER 2011

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INVITATION TO BID:

**EDUCATION AND HUMANITIES CENTER
FIRE ALARM REPLACEMENT
Contract: 2011-PC-06-EH**

*Contact Delaware Engineering & Design
Corporation for Bid Documents 302-738-7172*

TO: ALL BIDDERS

The enclosed packet contains an "INVITATION TO BID" for the Education and Humanities Center Fire Alarm Replacement. The bid package consists of the following documents:

INVITATION TO BID – CONTRACT NO. 2011-PC-06-EH

1. Invitation to Bid
 - a. Executive Order 11246
 - b. Non-Collusion Statement and Acceptance
2. Bid Form
3. Site Conditions
4. General Conditions
5. Payment Bond
6. Performance Bond
7. Project Design Drawings and Technical Specifications

Your bid and the Bid Reply Section must be executed completely and correctly and returned in a clearly marked envelope by 2:00 p.m., EST., November 30, 2011, to be considered.

TO: Delaware State University
Administration Bldg.
Purchasing
1200 N. DuPont Highway
Dover, DE 19901-2277

Attn: Planning and Construction
Anthony Patterson,
Director of Planning and Construction

Please review and follow the information and instructions contained in the General Provisions and this Invitation to Bid. Should you need additional information, please call Anthony Patterson at (302) 857-7144.

Minority Business Enterprise (MBE) and Women Owned Business Enterprise (WBE) will be afforded full opportunity to submit bids and will not be subject to discrimination on the basis of race, color, national origin, or sex in consideration of this award.

Delaware State University reserves the right to extend the time and place for the opening of bids from that described in the advertisement, of not less than five (5) calendar days notice by certified delivery, facsimile transmission, or by verifiable electronic means to those bidders who obtained copies of the plans and specifications or contract

descriptions. Delaware State University reserves the right to reject any and all items, bids and waive all informalities.

Project is Prevailing Wage for Building Construction, State of Delaware, Department of Labor, (302) 761-8200.

SECTION 100.00 BID GENERAL INFORMATION:

Whenever the following terms are used, their intent and meaning shall be interpreted as follows:

State:	The State of Delaware
Board:	The Delaware State University Board of Trustees
University:	The Delaware State University
Designated Official:	The person authorized to act for the Delaware State University Board of Trustees
Inspector:	Individual authorized by the University to act as its agent to inspect any feature of the material or work entering into the contract
Bidder:	Any individual, firm or corporation submitting a bid in the proper required form for furnishing the material and/or accomplishing the work as specified and acting directly or through a duly authorized representative
Contractor:	Any individual, firm or corporation with whom a contract is made by the University
Surety:	The corporate body which bound with and for the contract, or which is liable, and which engages to be responsible for the contractor's payments of all debts pertaining to and for this acceptable performance of the work for which he has contracted
Bid:	The offer of the bid submitted on the approved form and setting forth the bidder's prices for furnishing material and/or performing work described in the specifications
Advertisement For Bids:	The public announcement that the University is inviting bids covering work to be performed or materials or equipment to be furnished
Bid Bond:	The security designated in the bid to be furnished by the bidder as a guaranty of good faith to enter into a contract with the University if the work to be performed or the materials to be furnished is awarded to him
Special Provisions:	Special provisions are specific clauses setting forth conditions or requirements peculiar to the contract under consideration and covering the work, materials, products, or equipment involved in the bid
Contract:	The written agreement covering the furnishing and delivery of materials and/or services which shall consist of the following: A. Bid by firm or individual furnishing materials and/or services B. Agreement by the vendor to abide by all terms, conditions, specifications, and addenda of the bidding documents

C. Approved University purchase order

Performance, Labor**& Material Payment Bond:**

The approved form of security furnished by the Contractor and his surety as a guaranty of good faith on the part of the contractor to execute the work in accordance with the terms of the Special Provisions.

SECTION 200.00 PROPOSAL REQUIREMENTS AND CONDITIONS**ALL PROPOSALS MUST BE MADE IN ACCORDANCE WITH THE FOLLOWING INSTRUCTIONS:****SECTION 200.1 Presentation of Bids**

A. Bids shall be presented on the forms issued with the specifications. Special lease or rental bids may be presented on vendor's forms. All blanks shall be properly filled in. Live signatures are required. Any alterations, erasures shall be initialed by bidder. The bid form shall be executed to show the amount bid. The total amount of the bid submitted shall be typed, or clearly printed in ink, in both written and numerical figures on the bid form and summary.

B. Bids shall be received at the Office of the Director of Purchasing, (unless otherwise indicated), Delaware State University, 1200 N. DuPont Highway, Dover, Delaware, 19901-2277, not later than the time state in the advertisement. Bids will be received in a sealed envelope and plainly marked as follows:

Contract No.: 2011-PC-06-EH

Name of Bidder:

C. Date of Opening: No responsibility shall be attached to any persons for the premature opening of any bids not properly identified. (See "B" under Paragraph 1).

D. Delaware State University reserves the right to accept, or reject any or all bids either by item, section, job and/or by the total amount proposed is less than the sum of the individual items, sections, or jobs, it will be inferred that a discount was offered as an inducement to award all items, sections, or jobs to the bidder.

SECTION 200.2 Bid Guaranty

A. All bid bids exceeding \$10,000 in cost, shall be accompanied with a bid bond or certified check drawn on solvent bank or trust company licensed to do business with the State of Delaware unless WAIVED under section titled: "Special Provisions." The bid bond or certified check shall be drawn to the order of the Delaware State University in the amount of at

least ten percent (10%) of the total price (including all alternates)

B. Upon the execution of a formal contract and agreement, the Bid Bond will be returned to the successful bidder. The deposits of the unsuccessful bidder will be returned to them immediately upon the awarding of the contract, or the rejection of all bids, but in any event, no later than ninety (90) days after the opening of the bids.

C. Should a successful bidder, on being notified in writing by the University, fail to execute the Notification of Award and Agreement contract and furnish satisfactory Performance, Labor and Material payment bond (if requested under Special Provisions) within twenty (20) days from date of receipt, the award of the contract may be rescinded and the certified check or bid bond become liable up to the full amount and the bidder liable for any difference in the bid, which the University may be obligated to award to another bidder because of the omission or refusal of the successful bidder to execute the contract and Performance bond as aforesaid.

D. If no award contract is made, all checks will be returned to the depositor within ninety days of the opening bid.

SECTION 200.3 Bid Withdrawals

A. A bidder may withdraw his bid after it has been deposited with the University if such request is made prior to the time set for the opening of the bid.

B. Any bidder exercising the privilege of withdrawing his bid (bids) waives all claims that may arise should it be found that his opened bid, is for any reason, unacceptable to the University.

SECTION 200.4 Bid Openings

A. Bids will be opened publicly and read at the place designated by the University, on the date and at the hour set forth in the advertisement. Bidders or their authorized representatives are invited to be present.

B. Bids received after the time set for the public opening will not be given consideration and will be returned, unopened, to the bidder.

SECTION 200.5 Rejections of Bids

Any one (1) or more of the following causes may be considered sufficient reason for the disqualification of a bidder and the rejection of his bid:

A. Evidence of collusion among bidders and failure to execute non-collusion statement and execute Order 11246.

B. More than one (1) bid for the same contract from an individual firm, or corporation under the same, or different names. (excluding special lease or rental bids). This does not apply to agents, or brokers representing more than one principal, when separate bids are submitted.

C. Unsatisfactory performance record as proven by past experience with the University.

D. Delaware State University may request prospective bidders to answer a questionnaire and file a financial statement containing a complete statement of the bidder's financial ability and experience in performing such work. If the University is not satisfied with the sufficiency of the answers to the questionnaire or financial statements, the owner may refuse the prospective bidder submitting such unsatisfactory answers access to the plans and specifications for the work and the bid of any such bidder may be disregarded.

E. Unit prices are obviously unbalanced either in excess, or below reasonable cost analysis value and/or in excess of the budget.

F. Any unauthorized additions, interlineations, conditioned or alternate bids, or irregularities of any kind which may tend to make the bid incomplete, indefinite, or ambiguous in meaning.

G. Lack of bid bond or certified check accompanying bids exceeding \$10,000 in cost unless waived under "Special Provisions."

H. Delaware State University reserves the right to waive any informants in bids received and to accept or reject any or all items bid.

I. Failure to submit with bid, the latest manufacturer's technical specifications on substitutions or "or equal" products.

SECTION 200.6 Notification of Award and Agreement

A. Upon notification by Delaware State University that the bid has been accepted, the successful bidder shall agree to execute a formal contract (bids of \$10,000 or over), within twenty (20) days, with the University, embodying the bid which he has submitted consistent with the specifications, terms and conditions provided (and provide Performance, Labor & Material

payment bonds if required under special provisions). Such contract shall make provisions for all Federal, State and City antipollution, conservation and environmental protection ordinances, rules and regulations which will be involved in the execution of the contract. The cost for any anti-pollution, conservation or environmental protection control activity that is not specified in the contract, or otherwise provided for, but becomes necessary or is deemed desirable by the University after contract has been awarded, shall be paid in accordance with Section 6904 (E) of the Delaware Code.

B. The notification of award and agreement shall not be considered final until a purchase order has been approved by the University and received by the successful bidder.

SECTION 200.7 Termination of Contract

A. Delaware State University reserves the right to nullify any contract if, in its opinion, there is failure at any time to perform adequately the stipulations of this invitation to bid, and/or the general conditions, special provisions and detailed specifications which are attached and made part of this bid, or in any case of any attempt to willfully impose upon the University materials, products, workmanship or service which is, in the opinion of the University, of an unacceptable quality.

SECTION 200.8 Performances, Labor & Material Payment Bond

A. The successful bidder will (when requested under Section: "Special Provisions") be required to furnish satisfactory bonds for the faithful Performance, Labor & Material payment, guarantee periods and the satisfactory completion of all work as specified.

B. The bonds shall be paid for by the contractor and shall cover the total amount of the contract price. Bonds must accompany the executed contract award and agreement.

C. Failure to submit properly executed bonds within twenty (20) days may result in the University awarding contract to the next lowest responsible bidder.

SECTION 200.9 Non-Collusion Statement

A. Delaware State University requires a sworn statement to accompany all bids, executed by, or on the behalf of the person, or corporation submitting the bid, certifying that such person, or corporation has not either directly, or indirectly participated in any collusion with such contract. The form for this sworn statement is included

herein and must accompany bids being submitted.

SECTION 200.10 Compliance Certificate

A. In compliance with the applicable requirements of Executive Order No. 11246, all

SECTION 200.11 FORMS:

EXECUTIVE ORDER 11246 - SECTION 200.9

GENERAL COMPLIANCE CERTIFICATE AND AGREEMENT OF VENDORS AND SUBCONTRACTORS

To: _____ AND ITS SUBSIDIARY CORPORATIONS

EXECUTIVE ORDER 11246

The undersigned Contractor agrees and certifies, unless otherwise exempt, that it is in compliance with the applicable requirement of Executive Order 11246 as set forth below, or will take steps to comply with such requirements prior to acceptance of any order from us. This agreement and certificate shall form a part of, and be deemed incorporated in each order submitted to you for supplies or services exceeding \$10,000 if and so long as required by Executive Order No. 11246 and regulations issued hereunder by the Office of Federal Contract Compliance, Equal Employment Opportunity.

A. EQUAL OPPORTUNITY CLAUSE

During the performance of this contract the Contractor agrees as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising; layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer, setting forth the provisions of this non-discrimination clause.

2. The Contractor will, in all solicitations or advertisements for employees place by or on behalf of the Contractor, state that all qualified applicants will receive consideration for

bidders submitting bids exceeding \$10,000 shall properly execute the "General Compliance Certificate and Agreement of Vendors and Subcontractors" form submitted herein. The form must accompany bids being submitted.

employment without regard to race, color, religion, sex or national origin.

3. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the agency-contracting officer advising the labor union or workers' representative of the Contractor's commitments under section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to all employees and applicants for employment.

4. The Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

5. The Contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto; and will permit access to his books, records, accounts by the contracting agency of the Secretary of Labor for purpose of investigation to ascertain compliance with such rules, regulations, and orders.

6. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any such rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965 and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by

rule, regulations, or order of the Secretary of Labor, or as otherwise provided by law.

7. The Contractor will include the provisions of Paragraph (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such section with respect to any

B. CERTIFICATE OF NONSEGREGATED FACILITIES

Contractor does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location under his control, where segregated facilities are maintained. He certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. Contractor agrees that a breach of this certification is in violation of the Equal Opportunity Clause in this contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking foundations, recreation or entertainment areas, transportation and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin because of habit, local custom, or otherwise. He further agrees that (except where he has obtained identical certifications in his files, and that he will forward the following notice to such proposed subcontractors (except where the proposed subcontractors have submitted identical certifications for specific time periods).

subcontractor's purchase order as the contracting agency may direct as a means of enforcing such provisions including sanction for non-compliance; provided however, that in the event the Contractor becomes involved in or is threatened with, litigation with a subcontractor or vendor as a result of such direction by contracting agency, the Contractor may request the United States to enter into such litigation to protect the interest of the United States.

C. NOTICE OF PROSPECTIVE SUBCONTRACTORS OR REQUIREMENTS OF NONSEGREGATED FACILITIES

A certificate of Nonsegregated Facilities must be Submitted prior to the award of a subcontract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity clause. The certification may be submitted either for each subcontractor or for all subcontracts during a period (i.e. quarterly, semiannually, or annually). Note: The penalty for making false statements in offers is prescribed in U.S.C. 1001.

D. AFFIRMATIVE ACTION COMPLIANCE PROGRAM

Contractor agrees to develop a written Affirmative Action Compliance program for each of its establishments as required by Section 60-140 Title 41 of the Code of Federal Regulations.

E. EMPLOYER INFORMATION REPORT (EEO-1 STANDARD FORM 100)

Contractor has filed standard Form 100, entitled "Equal Employment Opportunity Employer Information Report EEO-1" as required by Section 60-1-7 of Title 41 of the code of Federal regulations.

- ☐ We are exempt from filing SF 100 (EEO-1) as defined above (check if applicable).

SIGNATURE OF BIDDER

CORPORATE SEAL

BY: _____

ATTEST:

Secretary
City of _____ County of _____ State of _____

SWORN to and SUBSCRIBED before me this _____
day of _____, 20____.

Notary Public

My Commission Expires: _____

SECTION 200.12 FORMS:

NON-COLLUSION STATEMENT - SECTION 200.10

Delaware State University
Office of Purchasing
Dover, DE 19901-2277

Gentlemen:

This is to certify that the undersigned bidder

has not, either directly or indirectly entered into any agreement, participated in any
collusion, or otherwise taken any action in restraint of free competitive bidding in
connection with the bid for Contract No. _____ or any part(s)
thereof, submitted to the Delaware State University on the _____ day of _____,
20____.

SIGNATURE OF BIDDER

CORPORATE SEAL

BY: _____

ATTEST:

Secretary

SWORN to and SUBSCRIBED before me this _____ day of _____, 20____.

City of _____

County of _____

State of _____

Contact Delaware Engineering & Design
Corporation for Bid Documents 302-738-7172

My Commission Expires: _____

Notary Public

SECTION 300.00 GENERAL CONDITIONS

SECTION 300.1 Interpretation of Estimates

A. The estimate of quantities given in the bid are considered approximate and given as a basis for comparison of bids. Delaware State University reserves the right to increase, or decrease the quantity of any item as deemed necessary.

SECTION 300.2 Prices Quoted

A. Items covered by this bid are exempt of all Federal State taxes. Such taxes shall not be included in prices quoted.

B. Prices quoted shall include F.O.B. Delaware State University freight prepaid, installed as directed and all charges imposed during the life of the contract.

C. Bids submitted by the bidder shall be binding for a period of ninety (90) days from the opening date of bid unless requested for an additional period of time under "Special Provisions."

D. Delaware State University does receive Federal Grants; therefore, all bidders should keep in mind that the University is entitled to the privilege of using GSA contracts.

SECTION 300.3 Use of Trade Names

A. In every case where a trade name is used for the purpose of identification and simplifications, it shall be understood that merchandise of equal quality and similar features will be subject to acceptance by Delaware State University. However, Delaware State University reserves the right to make the final determination as to whether or not the merchandise offered is in fact of equal quality with similar features.

SECTION 300.4 Or Equal Bids

A. Substitution of products offered by bidders other than specified, may be considered, provided the bidder furnishes (with his bid) the manufacturer's latest brochure, which shall contain complete specifications to enable Delaware State University to compare and determine if article (s) and/or services offered

comply with the intent of the specifications herein and will be satisfactory for the work to be accomplished. Failure to provide this information with the bid may result in rejection of bid. Delaware State University shall be the sole judge of equivalencies.

SECTION 300.5 Merchandise Sample

A. Before any contract is awarded, the successful bidder will (when requested under "Special Provision") furnish a complete statement of the origin, composition, manufacturer and sample of any or all materials or items used in the contract for the purpose of evaluating and testing.

SECTION 300.6 Warranty

A. Bidders shall include their bid, a statement on conditions and terms of warranty of all items and/or services to be provided.

B. Defects occurring during the warranty period shall be made good and/or corrected by the contractor without cost to Delaware State University.

C. The contractor must submit warranty to the University that all materials and equipment furnished under this contract will be new unless otherwise specified, and that all work be of good quality, free from faults and defects and in conformance with the specifications.

D. Verification and inspection upon delivery of materials or services (s) will be performed by representatives of the University and will be rejected if found defective in any way, and not conforming with specifications.

SECTION 300.7 Delivery

A. Time is of the essence and may be a factor considered in making the award. List delivery and/or completion date in indicated space on bid form.

B. The bidder agrees to deliver all equipment and/or perform all work in accordance with its specifications.

C. All cartons and packages being delivered directly, or indirectly to the University shall show identifying purchase order number and contain a packing list indicating quantities being shipped. Deliveries must be made to location indicated on purchase order.

SECTION 300.8 Liquidated Damages

A. Requested under section "Special Provisions" a designated sum will be deducted by Delaware State University from monies due vendor, not as a penalty, but as liquidated damages for failure to deliver/complete within the time limit specified. Saturdays, Sundays and state legal holidays will not be excluded from the computations for the assessment of liquidated damages.

SECTION 300.9 Laws to be Observed

A. The Contractor is presumed to know and shall strictly comply with all national, state and county laws and city or town ordinances and regulations in any manner affecting the conduct of the work or delivery. The Contractor shall indemnify and save harmless the State of Delaware, Delaware State University and all officers, agents and servants thereof against any claim of liability arising from or based upon the violation of any such laws, ordinances, regulations, orders or decrees whether by himself or his employees.

B. All necessary permits, licenses, insurance policies, etc., required by local state or federal laws shall be provided by the contractor at his/her own expense and shall be made available for inspection upon request by authorized personnel of Delaware State University.

SECTION 300.10 Contract Documents

A. The complete specifications together with all addenda shall be accepted by parties to the contract and bound for the execution of the work herein contemplated and required.

B. Delaware State University reserves the right to recall plans and specifications at any time before or after bids are received, in which case all plans and specifications must be immediately returned to the University.

SECTION 300.11 Obligation of Bidder

A. Before submitting bids, bidder shall inform themselves fully of the nature of the work by personal examination of the site, the drawings, and specifications and by such other means as

they consider necessary as to matters, conditions and considerations bearing on or in any way affecting the preparation of their bids and the contract. They shall not at any time after submitting their bid, dispute or complain of such drawings or the specifications and the general conditions, nor assert that there is any misunderstanding in regard to the location, extent or nature of work to be performed.

SECTION 300.12 Billing

A. The successful bidder (s) are required to bill upon completion, delivery, and installation as specified. All invoices must be identified by the approved purchase order received and be forwarded to:

Delaware State University
Accounts Payable
1200 N. DuPont Highway
Dover, DE 19901-2277

SECTION 300.13 Terms of Payment

A. Delaware State University will authorize and process invoices properly identified by a valid purchase order for payment normally with thirty (30) days after date of receipt, completion of services, UNLESS vendor indicates a discount for prompt payment. Such discounts for prompt payment must be clearly indicated on all invoices. Failure to properly identify invoices with a valid purchase order number will result in payment being withheld until such time invoice is identified and/or all changes have been authorized in writing.

B. Delaware State University may make partial payment on any Contract provided Contractor complies with all General Terms of Condition as stated herein.

SECTION 300.14 Funding Out

A. The continuation of this contract is contingent upon funding appropriation by the Delaware General Assembly and/or funding duly authorized by the Delaware State University Board of Trustees.

SECTION 400.00 SPECIAL PROVISIONS:

The following "Special Provisions" shall be considered by all Bidders as part of this Contract:

400.0 BID OPENING, TIME AND PLACE: All bids must be received no later than 2:00 P.M. local time, December 14, 2007. Bids received after this time and date will not be accepted. Bids will be received by the Office of Purchasing, Room 300, of the New Administration and Student Services Building, Delaware State University, 1200 N. DuPont Highway, Dover, DE 19901-2277, and will be publicly opened at the time and date indicated above.

400.1 CONTRACT REQUIREMENTS: The contract shall provide labor and materials to complete the abatement of the Martin Luther King Jr. Center.

400.2 CONTRACT PERIOD: The contract for the goods and/or services herein shall be valid from the date of award until completion of work.

400.3 POINT OF CONTACT: The sole point of contact for purposes of this Invitation to Bid (ITB) is Anthony Patterson, Director of Planning & Construction, Delaware State University, (302) 857-7144. Any and all changes or modifications affecting this contract in any matter shall be subject to written approval of DSU Purchasing Department.

400.4 PRICES: Prices shall remain firm until all of the terms and conditions contained herein are satisfied.

400.5 BID BOND REQUIREMENTS: 10% of Bid Value.

400.6 PERFORMANCE BOND REQUIREMENTS: 100% of Contract Value.

400.7 BASIS OF AWARD: This contract shall be awarded to the most responsible bidder who best meets the requirements of the University and the terms and conditions of the bid. The award will be made on the basis of the capability of the vendor, warranty against defects in material and workmanship, quality of proposed agreement, price, and prior service history. Delaware State University reserves the right to reject any or all bids, in whole or in part, to make partial awards, award by type, item for item, or lump sum, whichever may be most advantageous to the University.

400.8 PRE-BID MEETING: A non-mandatory pre-bid meeting will be held.

400.9 DELAWARE BUSINESS LICENSE: All firms must have a Delaware business license as required by Delaware Code, Title 30; Section 2102.

400.10 CERTIFICATE OF INSURANCE: Copy of insurance **required to be provided prior to issuance of purchase order.**

400.11 HOLD HARMLESS: The vendor shall agree by offering a bid on this contract, that they shall indemnify and hold the State of Delaware and Delaware State University harmless from and against any and all claims for injury, loss of life, or damage to, or loss of property caused, or alleged to be caused, by acts or omissions of the

vendor, its employees, and invitees on or about the premises and which arise out of the vendor's performance, or failure to perform as required by the University in this agreement.

401.1 LIQUIDATED DAMAGES: A sum of \$1,500.00 per calendar day shall be deducted by Delaware State University from monies due vendor; not as a penalty, but as liquidated damages for failure to deliver/complete before January 21, 2008, 08:00 am. Saturdays, Sundays and state legal holidays will **not** be excluded from the computations for the assessment of liquidated damages.

401.2 NON-PERFORMANCE: **In the event the vendor does not fulfill its obligations under the terms and conditions of this contract due, the ordering department may purchase any equivalent product and/or service on the open market. Any differences in the cost between the contracts prices herein and the prices herein and the price of the open market shall be the responsibility of the vendor. Under no circumstances shall monies be due to the vendor in the event the open market products can be obtained below contract cost. Any monies charged to the vendor may be deducted from an open invoice.**

401.3 FORCE MAJEURE: Neither the vendor nor the University shall be held liable for non-performance under the terms and conditions of this contract due, but not limited to, government restriction, strike, flood, fire, or unforeseen catastrophe beyond either party's control. Each party shall notify the other of any situation that may prevent performance under the terms and conditions of this contract.

401.4 BID/CONTRACT EXECUTION: Both non-collusion statement and the compliance certificate that is enclosed with this Invitation to Bid and the contract form delivered to the successful bidder for signature **MUST** be executed by a representative who has the legal capacity to enter the organization into a formal contract with Delaware State University.

401.5 AMENDMENTS: The University reserves the right to amend this ITB at any time prior to the opening date. Addenda, if necessary, will be issued a minimum of three (3) days prior to the date of opening via certified mail or fax to all prospective offerors who have picked up or were mailed specifications. All amendments issued by the University must be acknowledged as to the receipt of the same. Each amendment will provide a space for signature to acknowledge receipt. This signed amendment must be included in your bid package. **Failure to include this acknowledgement may be basis for rejection of the bid.**

401.6 PUBLIC INFORMATION: Offerors must give specific attention to the identification of any portion of their bid that they deem confidential or proprietary information. This information is usually restricted to financial statements, patent or copyright information, or information concerning personnel which is considered confidential.

401.7 SITE INVESTIGATION: As applicable, offerors are expected to inspect the sites where services are requested and satisfy themselves as to all general and local conditions that may affect or impact the cost of the contract. Under no circumstances, will failure to inspect the site (s) constitute grounds for any claim, or additional costs after the award of the contract.

401.8 CANCELLATION OF CONTRACT: In the event of unsatisfactory performance, Delaware State University reserves the right to cancel this contract upon written notice.

SECTION 500.0 SPECIFICATIONS:

All work/Material (s)/services under this Contract MUST MEET OR EXCEED THE FOLLOWING MINIMUM ACCEPTABLE SPECIFICATIONS:

500.1 COMPLAINTS: Unless the offerors bid expressly states otherwise, the offerors agrees to comply with all terms, conditions, special provisions, specifications, and addendums of this contract. Any or all exceptions must be clearly identified in the proposal.

500.2 NON-DISCRIMINATION/EQUAL OPPORTUNITY/AFFIRMATIVE ACTION: The policy of the University, both traditionally and currently, is that discrimination against any individual, for reason of race, color, creed, national origin, sex, handicap, or age, is specifically prohibited. Accordingly, the University acts as one of its purchasing criteria, the affirmative action of its vendors in providing equal employment opportunities for all minority groups.

500.3 ASSIGNMENT: Neither party may assign or subcontract any of its rights or obligations under the contract in whole or in part. Any attempted assignment under the contract shall be void and of no effect.

500.4 Technical Specifications: see attached.

END

Contact Delaware Engineering & Design
Corporation for Bid Documents 302-738-1172



BID FORM

**Education and Humanities Center
Fire Alarm System Replacement
Contract: 2011-PC-06-EH
Date: November 30, 2011
Time: 2:00 pm**

SUBMITTED BY:

TO:

Delaware State University
Administration Bldg.
Purchasing
1260 N. DuPont Highway
Dover, DE 19901-2277

Attn: Director of Planning and Construction
Anthony Patterson

We, Contractor, shall furnish all labor, materials, equipment, tools, facilities, supplies, services and do all things necessary for the above referenced contract, in accordance with quote and as further described herein.

A. PRICES (Note: project is prevailing wage)

1. Our lump sum price for the foregoing is _____ dollars (\$ _____ 00).
2. At DSU's option, changes or additional work to the contract scope, which are requested, directed or agreed to by DSU, may be handled on the following basis:
 - a. Lump Sum - For which we will provide complete documentation including, but not limited to, estimate sheets reflecting the cost of labor, material, equipment, taxes, insurance, permits, overhead, and profit to support our proposal.
 - b. Unit Price - The following unit prices for work complete in place include all costs incidental thereto and when multiplied by the actual quantities of work performed, will determine our compensation for unit price work:
 1. Electrician _____ per hour.
 2. Electrician Apprentice \$ _____ per hour.
 - c. Time-and-Material - For which we will be reimbursed for the following items only:
 - (1) Labor - To be supported by time sheets signed by both our and DSU's site representatives, and billed in accordance with the attached schedule(s) of all-inclusive rates covering:
 - (a) Straight time or premium-time wages, fringe benefits, subsistence and/or travel allowances, in accordance with applicable labor agreements or Contractor's established policies for direct and indirect field labor up to and including the level of hourly-paid General Foreman.
 - (b) Taxes including, without limitation, Federal and State Unemployment taxes, and FICA taxes.
 - (c) Insurance including, without limitation, Workers' Compensation, Employer's Liability, Commercial General Liability Insurance, and Automotive Insurance.
 - (d) Overhead to cover all other costs not otherwise reimbursed including, but not limited to,
 - small tools (small tools shall be those costing less than \$2,500 new)
 - consumable supplies (including welding rod, gases, fuel, etc.) unless otherwise agreed in writing by DSU.

- field office expenses, including, without limitation, telephone service, utilities and travel expenses
- home office management and overhead
- field administration and supervision above the level of General Foreman

(e) Profit.

(2) Construction Equipment and Large Tools (large tools shall be those costing \$2,500.00 or more new).

(a) Owned by Contractor: At rates shown on the attached list of rental rates dated _____. Notwithstanding any provisions on said list, the rates include all fuel, lubricants, maintenance, and standby costs. Charges shall be based only on actual hours of operation.

(b) Rented from a Third Party: At actual cost including applicable tax plus ____% of such actual costs and supported by invoices. Rental of construction equipment and large tools shall be approved in advance by DSU.

(c) Materials at actual costs, including applicable tax plus ____ % of such actual cost for materials purchased by Contractor and supported by invoices. Consumable supplies are not reimbursable under this item.

(d) Subcontracts at actual cost, determined in the above manner and supported by invoices plus ____% of such actual cost. We will submit schedule(s) of labor billing rates, rental rates, and mark-up for materials for each subcontractor within ____ working days following submission of this proposal.

(3) Retainage will be withheld in the amount of 5%.

B. PROPOSED SUBSTITUTION OF MATERIAL AND EQUIPMENT

All material and equipment included in our lump sum price is in accordance with the specifications issued with DSU's invitation to Bid. We submit below our proposed substitutions which we consider equal to those specified and include (1) sufficient descriptions to allow comparison, and (2) the effect the substitutions would have on our lump sum price and schedule if our proposed substitutions are accepted by DSU.

Specified Material	Proposed Equal Material	Effect on our Proposal
_____	_____	_____
_____	_____	_____
_____	_____	_____

C. WORK SCHEDULE

1. We understand that DSU's schedule is defined below. By submitting a Bid, we agree to meet this schedule unless otherwise noted. Our proposed detailed project schedule shows more fully the sequence of activities necessary to meet the specified schedule.

- Contractor shall begin abatement on December 21, 2007
- Contractor shall complete abatement on January 27, 2008

Our proposed (**attached**) detailed project schedule shows more fully the sequence of activities necessary to meet the specified schedule.

We can begin work _____ calendar days after notification of award and will require _____ calendar days thereafter to complete the work. Work on the project will begin _____ calendar days after Letter of Intent.

2. Work Hours

Work during "regular hours" at this site is being performed on a single shift, eight hours per day, 7:00 AM to 3:00 PM, and five days per week, Monday through Friday. To meet the schedule established on the basis of Item 1 above, our proposed work hours will be _____ hours per day, _____ AM to _____ PM, and _____ days per week, _____ through _____ the cost of which is reflected in our lump sum price. Our lump sum price also includes any mandatory off-hours work required per special conditions.

D. SITE SUPERVISOR

We propose to use _____ as our site supervisor. A resume of his/her qualifications is **attached**.

We understand that DSU reserves the right to interview him/her prior to contract award/prior to start of work and to reject him/her if not considered acceptable. If rejected, we will propose alternate personnel for the position who will be subject to the same review and acceptance procedure, at no increase in our lump sum proposal.

We also understand DSU reserves the right to reject our bid if we are unable to provide a site supervisor acceptable to DSU within thirty (30) calendar days after submission of this bid.

E. SUBCONTRACTORS

The following subcontractors and their subcontractors are intended to be used on this contract.

Items to Be Subcontracted	Subcontractor	Address
_____	_____	_____
_____	_____	_____

F. REMARKS

1. We have received the following Addenda _____.

2. In accepting a contract with DSU, we agree that a description of the work performed will not be used for publicity purposes.
3. We have read the General Conditions and accept all provisions contained therein.
4. Our Bid Price is firm based on contract award within ninety (90) calendar days of the date of submittal of this bid.
5. We have reviewed the safety requirements specified or referenced in the General Conditions, the Site Conditions, and Scope of Work for the Project and are familiar with federal, state, and local safety regulations (including the Occupational Safety and Health Act). We hereby affirm our commitment to perform the work safely and in compliance with all contractual safety regulations and requirements.
6. Our proposal is based on the bid documents, including any Addenda, and the written information contained therein, and any "Remarks" or "Clarifications" noted herein or attached hereto. We understand that we will not be compensated at a later date for claimed additional costs based on oral information received during the bid period, but which is not identified in our proposal and subsequently accepted in writing by DSU.
7. Remarks or Clarifications:

Signature Required

Print Name

Contractor's License Number(s) Applicable State/City

Signature

Date

Title Phone

STATE OF DELAWARE
OFFICE OF MANAGEMENT AND BUDGET

PERFORMANCE BOND

Bond Number: _____

KNOW ALL PERSONS BY THESE PRESENTS, that we, _____, as principal (**"Principal"**), and _____, a _____ corporation, legally authorized to do business in the State of Delaware, as surety (**"Surety"**), are held and firmly bound unto the _____ (**"Owner"**) (*insert State agency name*), in the amount of _____ (\$ _____) to be paid to **Owner**, for which payment well and truly to be made, we do bind ourselves, our and each and every of our heirs, executors, administrations, successors and assigns, jointly and severally, for and in the whole, firmly by these presents.

Sealed with our seals and dated this _____ day of _____, 20__.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, that if **Principal**, who has been awarded by **Owner** that certain contract known as Contract No. _____ dated the _____ day of _____, 20__ (the "Contract"), which Contract is incorporated herein by reference, shall well and truly provide and furnish all materials, appliances and tools and perform all the work required under and pursuant to the terms and conditions of the Contract and the Contract Documents (as defined in the Contract) or any changes or modifications thereto made as therein provided, shall make good and reimburse **Owner** sufficient funds to pay the costs of completing the Contract that **Owner** may sustain by reason of any failure or default on the part of **Principal**, and shall also indemnify and save harmless **Owner** from all costs, damages and expenses arising out of or by reason of the performance of the Contract and for as long as provided by the Contract; then this obligation shall be void, otherwise to be and remain in full force and effect.

Surety, for value received, hereby stipulates and agrees, if requested to do so by **Owner**, to fully perform and complete the work to be performed under the Contract pursuant to the terms, conditions and covenants thereof, if for any cause **Principal** fails or neglects to so fully perform and complete such work.

Surety, for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of **Surety** and its bond shall be in no way impaired or affected by any extension of time, modification, omission, addition or change in or to the Contract or the work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any work to be performed or any monies due or to become due thereunder; and **Surety** hereby waives notice of any and all such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, subcontractors, and other

transferees shall have the same effect as to **Surety** as though done or omitted to be done by or in relation to **Principal**.

Surety hereby stipulates and agrees that no modifications, omissions or additions in or to the terms of the Contract shall in any way whatsoever affect the obligation of **Surety** and its bond.

Any proceeding, legal or equitable, under this Bond may be brought in any court of competent jurisdiction in the State of Delaware. Notices to **Surety** or Contractor may be mailed or delivered to them at their respective addresses shown below.

IN WITNESS WHEREOF, **Principal** and **Surety** have hereunto set their hand and seals, and such of them as are corporations have caused their corporate seal to be hereto affixed and these presents to be signed by their duly authorized officers, the day and year first above written.

PRINCIPAL

Name: _____

Witness or Attest: Address: _____

Name:

(Corporate Seal)

By: _____ (SEAL)

Name:

Title:

SURETY

Name: _____

Witness or Attest: Address: _____

Name:

(Corporate Seal)

By: _____ (SEAL)

Name:

Title:

STATE OF DELAWARE
OFFICE OF MANAGEMENT AND BUDGET

PAYMENT BOND

Bond Number: _____

KNOW ALL PERSONS BY THESE PRESENTS, that we, _____, as principal ("**Principal**"), and _____, a _____ corporation, legally authorized to do business in the State of Delaware, as surety ("**Surety**"), are held and firmly bound unto the _____ ("**Owner**") (*insert State agency name*), in the amount of _____ (\$ _____), to be paid to **Owner**, for which payment well and truly to be made, we do bind ourselves, our and each and every of our heirs, executors, administrations, successors and assigns, jointly and severally, for and in the whole firmly by these presents.

Sealed with our seals and dated this _____ day of _____, 20__.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, that if **Principal**, who has been awarded by **Owner** that certain contract known as Contract No. _____ dated the _____ day of _____, 20__ (the "Contract"), which Contract is incorporated herein by reference, shall well and truly pay all and every person furnishing materials or performing labor or service in and about the performance of the work under the Contract, all and every sums of money due him, her, them or any of them, for all such materials, labor and service for which **Principal** is liable, shall make good and reimburse **Owner** sufficient funds to pay such costs in the completion of the Contract as **Owner** may sustain by reason of any failure or default on the part of **Principal**, and shall also indemnify and save harmless **Owner** from all costs, damages and expenses arising out of or by reason of the performance of the Contract and for as long as provided by the Contract; then this obligation shall be void, otherwise to be and remain in full force and effect.

Surety, for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of **Surety** and its bond shall be in no way impaired or affected by any extension of time, modification, omission, addition or change in or to the Contract or the work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any work to be performed or any monies due or to become due thereunder; and **Surety** hereby waives notice of any and all such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, subcontractors, and other transferees shall have the same effect as to **Surety** as though done or omitted to be done by or in relation to **Principal**.

Surety hereby stipulates and agrees that no modifications, omission or additions in or to the terms of the Contract shall in any way whatsoever affect the obligation of **Surety** and its bond.

Any proceeding, legal or equitable, under this Bond may be brought in any court of competent jurisdiction in the State of Delaware. Notices to **Surety** or Contractor may be mailed or delivered to them at their respective addresses shown below.

IN WITNESS WHEREOF, **Principal** and **Surety** have hereunto set their hand and seals, and such of them as are corporations have caused their corporate seal to be hereto affixed and these presents to be signed by their duly authorized officers, the day and year first above written.

PRINCIPAL

Name: _____

Witness or Attest: Address: _____

Name:

(Corporate Seal)

By: _____ (SEAL)

Name:

Title:

SURETY

Name: _____

Witness or Attest: Address: _____

Name:

(Corporate Seal)

By: _____ (SEAL)

Name:

Title:

ARTICLE I

GENERAL CONDITIONS

1.1 BASIC DEFINITIONS

1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents consist of the agreement between Owner and Contractor (hereinafter the Agreement), Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the work issued by the Architect. Unless specifically enumerated in the agreement, the Contract Documents do not include other documents such as bidding requirements (advertisement or invitation to bid, Instructions to Bidders, sample forms, or portions of addenda relating to bidding requirements).

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 Architect and Contractor, (2) between the Construction Manager and Contractor, (3) between the Architect and Construction Manager, (4) between the Owner and a Subcontractor or Sub-subcontractor or (5) between any persons or entities other than the Owner and Contractor. The Construction Manager and Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of their 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.

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 Contractors and by the Owner's own forces including persons or entities under separate contracts not administered by the Construction Manager.

1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents, wherever located and whenever issued, 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, construction systems, standards and workmanship for the Work, and performance of related services.

1.1.7 THE PROJECT MANUAL

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

1.2 EXECUTION, CORRELATION AND INTENT

1.2.1 The Contract Documents shall be signed by the Owner and Contractor as provided in the Agreement. If either the Owner or Contractor or both do not sign all the Contract Documents, the Architect shall identify such unsigned Documents upon request.

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

1.2.3 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 consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results.

1.2.4 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.

1.2.5 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.

1.3 OWNERSHIP AND USE OF ARCHITECT'S DRAWINGS, SPECIFICATIONS AND OTHER DOCUMENTS

1.3.1 The Drawings, Specifications and other documents prepared by the Architect are instruments of the Architect's service through which the Work to be executed by the Contractor is described. The Contractor may retain one contract 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, and unless otherwise indicated the Architect shall be deemed the author of them and will retain all common law, statutory and other reserved rights, in addition to the copyright. All copies of them, 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 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 and Architect. The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are granted a limited license to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Architect appropriate to and for use in the execution of their Work under the Contract Documents. All copies made under the

license shall bear the statutory copyright notice, if any, shown on the Drawings, Specifications and other documents prepared by the Architect. 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 copyright or other reserved rights.

1.4 INTERPRETATION.

1.4.1 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.

ARTICLE 2 **OWNER**

2.1 DEFINITION

2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Owner" means the Owner or the Owner's authorized representative.

2.1.2 The Owner, upon reasonable written request, shall furnish to the Contractor in writing available information which is necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights.

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

2.2.1 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.

2.2.2 Except for permits and fees which are the responsibility of the Contractor under the Contract Documents, 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. Unless otherwise provided under the Contract Documents, the Owner, through itself or an authorized representative, including the Construction Manager, shall secure and pay for the building permit.

2.2.3 Information or services under the Owner's control shall be furnished by the Owner with reasonable promptness to avoid delay in orderly progress of the Work.

2.2.4 Unless otherwise provided in the Contract Documents, the Contractor will be furnished, free of charge, such copies of Drawings and Project Manuals as are reasonably necessary for execution of the Work.

2.2.5 The Owner shall forward all communications to the Contractor through its designated authorized representative, including a Construction Manager and shall contemporaneously provide the same communications to the Architect.

2.2.6 The foregoing are in addition to other duties and responsibilities of the Owner enumerated herein and especially those in respect to Article 6 (Construction by Owner or by Other Contractors), Article 9 (Payments and Completion) and Article 11 (Insurance and Bonds).

2.3 OWNER'S RIGHT TO STOP THE WORK

2.3.1 If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents as required by Paragraph 12.2 or persistently fails to carry out Work in accordance with the Contract Documents, the Owner, by written order signed personally or by an agent specifically so empowered by the Owner in writing, may order the Contractor to stop

the Work or any portion thereof, 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.

2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

2.4.2 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may after such seven-day period give the Contractor a second written notice to correct such deficiencies with a second seven-day period. If the Contractor within such second seven-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 the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the cost of correcting such deficiencies.

ARTICLE 3 **CONTRACTOR**

3.1 DEFINITION

3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout this Agreement as if singular in number. The term "contractor" means the Contractor or the Contractor's authorized representative.

3.1.2 The plural term "Contractors" refers to persons or entities that perform construction under Conditions of the Contract.

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

3.2.1 The Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by the Owner pursuant to Subparagraph 2.2.1 and shall at once report to the Owner's authorized representative, including the Construction Manager and Architect errors, inconsistencies or omissions discovered. If the Contractor performs any construction activity knowing it involves a recognized error, inconsistency or omission in the Contract Documents without such notice to the Owner's authorized representative, including the Construction Manager and Architect, the Contractor shall assume responsibility for such performance and shall bear the costs for correction.

3.2.2 The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies or omissions discovered shall be reported to the Owner's authorized representative, including the Construction Manager and Architect at once.

3.2.3 The Contractor shall perform the Work in accordance with the Contract Documents and approved 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 this Contract, subject to overall coordination of the Construction Manager as provided in Subparagraphs 4.6.3 and 4.6.4.

3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons performing portions of the Work under a contract with the Contractor.

3.3.3 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 Construction Manager or Architect in their administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor.

3.3.4 The Contractor shall inspect portions of the Project related to the Contractor's Work in order to determine that such portions are in proper condition to receive subsequent Work.

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

3.5 WARRANTY

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

3.6 TAXES

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

3.7 PERMITS, FEES AND NOTICES

3.7.1 Unless otherwise provided in the Contract Documents, the Owner shall secure and pay for the building permit and the Contractor shall secure and pay for all other permits and governmental fees, licenses and inspections necessary for proper execution and completion of the Work which are customarily secured after execution of the Contract and which are legally required when bids are received or negotiations concluded.

3.7.2 The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on performance of the Work.

3.7.3 It is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations. However, if the Contractor observes that portions of the Contract Documents are at variance

therewith, the Contractor shall promptly notify the Owner, Construction Manager, and Architect in writing, and necessary changes shall be accomplished by appropriate Modification.

3.7.4 If the Contractor performs Work knowing it to be contrary to laws, statutes, ordinances, building codes, and rules and regulations without such notice to the Owner, Construction Manager, and Architect, the Contractor shall assume full responsibility for such Work and shall bear the attributed costs.

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 against which the Contractor makes reasonable objection.

3.8.2 Unless otherwise provided in the Contract Documents:

- .1** materials and equipment under an allowance shall be selected with reasonable promptness by the Owner to avoid delay in the work;
- .2** allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts.
- .3** 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 and not in the allowances;
- .4** When ever 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 Clause 3.8.2.2 and (2) changes in Contractor's costs under Clause 3.8.2.3.

3.9 SUPERINTENDENT

3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor and communications given to the superintendent shall be as binding as if given by the Contractor.

3.10 CONTRACTOR'S CONSTRUCTION SCHEDULE

3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information and the Construction Managers approval, a Contractor's Construction Schedule for the Work. Such schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project construction schedule 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 cooperate with the Construction Manager in scheduling and performing the Contractor's Work to avoid conflict, delay in or interference with the Work of other Contractors or the construction or operations of the Owner's own forces.

3.10.3 The Contractor shall prepare and keep current, for the Construction Manager and Architect's approval, a schedule of submittals which is coordinated with the Contractor's Construction Schedule and allows the Construction Manager and Architect reasonable time to review submittals. A copy of the current submittal schedule shall be provided to the Construction Manager and Architect.

3.10.4 The Contractor shall conform to the most recent schedules.

3.11 DOCUMENTS AND SAMPLES AT THE SITE

3.11.1 The Contractor shall maintain at the site for the Owner one record copy of the Drawings, Specifications, addenda, Change Orders and other Modifications, in good order and marked currently to record changes and selections made during construction, and, in addition, approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Construction Manager and Architect and shall be delivered to the Construction Manager for submittal to the Owner upon completion of the Work.

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. The purpose of their submittal is to demonstrate for those portions of the Work for which submittals are required the way the contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Review by the Architect is subject to the limitations of Subparagraph 1.6.12.

3.12.5 The Contractor shall review, approve and submit to the Construction Manager, in accordance with the schedule and sequence approved by the Construction Manager, Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents. The Contractor shall cooperate with the Construction Manager in the coordination of the Contractor's Shop Drawings, Product Data, Samples and similar submittals with related documents submitted by other contractors. Submittals made by the Contractor that are not required by the Contract Documents may be returned without action.

3.12.6 The Contractor shall perform no portion of the Work requiring submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Construction Manager and Architect. Such Work shall be in accordance with approved submittals.

3.12.7 By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements, and field construction criteria related thereto and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

3.12.8 The Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Construction Manager's and Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Construction Manager and Architect in writing of such deviation at the time of submittal and the Construction Manager and Architect have given written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Construction Manager's and 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 Construction Manager and Architect on previous submittals.

3.12.10 Informational submittals upon which the Construction Manager and Architect are not expected to take responsive action may be so identified in the Contract Documents.

3.12.11 When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, the Construction Manager and Architect shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.

3.13 USE OF SITE

3.13.1 The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

3.13.2 The Contractor shall coordinate the Contractor's operations with, and secure the approval of, the Construction Manager before using any portion of the site.

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.

3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner's own forces or of other Contractors by cutting, patching, excavating or otherwise altering such construction. The Contractor shall not cut or otherwise alter such construction by other Contractors or by the Owner's own forces except with written consent of the Construction Manager, Owner and such other Contractors, such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the other Contractors or the Owner the Contractor's consent to cutting or otherwise altering the Work.

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 from and about the Project waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials.

3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Construction Manager may do so with the Owner's approval and the cost thereof shall be charged to the Contractor.

3.16 ACCESS TO WORK

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

3.17 ROYALTIES AND PATENTS

3.17.1 The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of patent rights and shall hold the Owner, Construction Manager 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. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a patent; the Contractor shall be responsible for such loss unless such information is promptly furnished to the Owner, Construction Manager and Architect.

3.18 INDEMNIFICATION

3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Construction Manager, Architect, the Owner's, Construction Manager's and Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from performance of the Work, 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) including loss of use resulting there from, but only to the extent caused in whole or in part by negligent acts or omissions of the Contractor, their 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 Paragraph 3.18.

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

3.18.3 The obligations of the Contractor under this Paragraph 3.18 shall not extend to the liability of the Construction Manager, Architect, their consultants, and agents and employees of any of them arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs or specifications, or (2) the giving of or the failure to give directions or instructions by the Construction Manager, Architect, their consultants, and agents and employees of any of them, provided such giving or failure to give is the primary cause of the injury or damage.

ARTICLE 4

ADMINISTRATION OF THE CONTRACT

4.1 ARCHITECT

4.1.1 The Architect is the person lawfully licensed to practice architecture or an entity lawfully practicing architecture identified as such in the Agreement and is referred to throughout the

Contract Documents as if singular in number. The term "Architect" means the Architect or the Architect's authorized representative.

4.2 CONSTRUCTION MANAGER

4.2.1 The Construction Manager is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Construction Manager" means the Construction Manager or the Construction Manager's authorized representative.

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

4.4 In case of termination of employment of the Construction Manager or Architect, the Owner shall appoint a construction manager or architect whose status under the Contract Documents shall be that of the former Construction Manager and/or Architect, respectively.

4.5 ADMINISTRATION OF THE CONTRACT

4.5.1 The Construction Manager and Architect will provide administration of the Contract as described in the Contract Documents, and will be the Owner's representatives (1) during construction, (2) until final payment is due and (3) with the Owner's concurrence, from time to time during the correction period described in Paragraph 12.2. The Construction Manager and Architect will advise and consult with the Owner and will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified by written instrument in accordance with other provisions of the Contract.

4.5.2 The Construction Manager will determine in general that the Work is being performed in accordance with the requirements of the Contract Documents, will keep the Owner informed of the progress of the Work, and will endeavor to guard the Owner against defects and deficiencies in the Work.

4.5.3 The Construction Manager will provide for coordination of the activities of other Contractors and of the Owner's own forces with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other Contractors and the Construction Manager and Owner in reviewing their construction schedules when directed to do so. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall constitute the schedules to be used by the Contractor, other Contractors, the Construction Manager and the Owner until subsequently revised.

4.5.4 The Construction Manager will schedule and coordinate the activities of the Contractors in accordance with the latest approved Project construction schedule.

4.5.5 The Architect will visit the site at intervals appropriate to the stage of construction to become generally familiar with the progress and quality of the completed Work and to determine in general if the Work is being performed in a manner indicating that the Work, when completed, will be in accordance with the Contract Documents. On the basis of the on-site inspections, the Architect will keep the Owner informed of progress of the Work and will endeavor to guard the Owner against defects and deficiencies in the work.

4.5.6 The Construction Manager, except to the extent required by Subparagraph 4.5.4 and Architect will not have control over, or charge of, and will not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's responsibility as provided in Paragraph 3.3 and neither will be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. Neither the Construction Manager nor the Architect will have control over or charge of or be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or of any other persons performing portions of the Work.

4.5.7 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 communicate through the Construction Manager, and shall contemporaneously provide the same communications to the Architect. 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 other Contractors shall be through the Construction Manager and shall be contemporaneously provided to the Architect.

4.5.8 The Construction Manager will review and certify all Applications for Payment by the Contractor, including final payment. The Construction Manager will assemble each of the Contractor's Applications for Payment with similar Applications from other Contractors into a Project Application and Project Certificate for Payment. After reviewing and certifying the amounts due the Contractors, the Construction Manager will submit the Project Application and Project Certificate for Payment, along with the applicable Contractors' Applications and Certificates for Payment, to the Architect.

4.5.9 Based on the Architect's observations and evaluations of Contractors' Applications for Payment, and the certifications of the Construction Manager, the Architect will review and certify the amounts due the Contractors and will issue a Project Certificate for Payment.

4.5.10 The Architect will have authority to reject Work which does not conform to the Contract Documents, and to require additional inspection or testing, in accordance with Subparagraphs 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed, but will take such action only after notifying the Construction Manager. Subject to review by the Architect, the Construction Manager will have the authority to reject Work which does not conform to the Contract Documents. Whenever the Construction Manager considers it necessary or advisable for implementation of the intent of the Contract Documents, the Construction Manager will have authority to require additional inspection or testing of the Work in accordance with Subparagraphs 13.5.2 and 13.5.3 whether or not such Work is fabricated, installed or completed. The foregoing authority of the Construction Manager will be subject to the provisions of Subparagraphs 4.5.18 through 4.5.20 inclusive, with respect to interpretations and decisions of the Architect. However, neither the Architect's nor the Construction Manager's authority to act under this Subparagraph 4.5.10 nor a decision made by either of them in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect or the Construction Manager to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons performing any of the Work.

4.5.11 The Construction Manager will receive from the Contractor and review and approve all shop Drawings, Product Data and Samples, coordinate them with information received from other Contractors, and transmit to the Architect those recommended for approval. The Construction Manager's actions will be taken with such reasonable promptness as to cause no delay in the Work of the Contractor or in the activities of other Contractors, the Owner or the Architect.

4.5.12 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 with such reasonable promptness as to cause no delay in the Work of the Contractor or in the activities of the other Contractors, the Owner, or the Construction Manager, 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 Paragraphs 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.

4.5.13 The Construction Manager will prepare Change Orders and Construction Change Directives.

4.5.14 Following consultation with the Construction Manager, the Architect will take appropriate action on Change Orders or Construction Change Directives in accordance with Article 7 and will have authority to order minor changes in the Work as provided in paragraph 7.4.

4.5.15 The Construction Manager will maintain at the site for the Owner one record copy of all Contracts, Drawings, Specifications, addenda, Change Orders and other Modifications, in good order and marked currently to record all changes and selections made during construction, and, in addition, approved Shop Drawings, Product Data, Samples and similar required submittals. These will be available to the Architect and the Contractor, and will be delivered to the Owner upon completion of the Project.

4.5.16 The Construction Manager will assist the Architect in conducting inspections to determine the dates of Substantial Completion and Final Completion, and will receive and forward to the Architect written warranties and related documents required by the Contract and assembled by the Contractor. The Construction Manager will forward to the Architect a final Project Application and Project Certificate for Payment upon compliance with the requirements of the Contract Documents.

4.5.17 The Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site.

4.5.18 The Architect will interpret and decide matters concerning performance under and requirements of the Contract Documents on written request of the Construction Manager, Owner or Contractor. The Architect's response to such requests will be made with reasonable promptness and within any time limits agreed upon. If no agreement is made concerning the time within which interpretations required of the Architect shall be furnished in compliance with this Paragraph 4.5, then delay shall not be recognized on account of failure by the Architect to furnish such interpretations until 15 days after written request is made for them.

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

4.6 CLAIMS AND DISPUTES

4.6.1 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 of time or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. Claims must be made by written notice. The responsibility to substantiate Claims shall rest with the party making the Claim.

4.6.2 Decision of Architect. Claims, including those alleging an error or omission by the Construction Manager or Architect shall be referred initially to the Architect for action as provided in Paragraph 4.7. A decision by the Architect, as provided in Subparagraph 4.7.4, shall be required as a condition precedent to litigation of a Claim between the Contractor and Owner as to all such matters 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 Architect in response to a Claim shall not be a condition precedent to arbitration or litigation in the event (1) the position of Architect is vacant, (2) the Architect has not received evidence or has failed to render a decision within agreed time limits, (3) the Architect has failed to take action required under Subparagraph 4.7.4 within 30 days after the Claim is made, (4) 45 days have passed after the Claim has been referred to the Architect or (5) the Claim relates to a mechanic's lien.

4.6.3 Time Limits on Claims. Claims must be made within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims must be made by written notice. An additional Claim made after the initial Claim has been implemented by Change Order will not be considered unless submitted in a timely manner.

4.6.4 Continuing Contract Performance. Pending final resolution of a Claim, unless otherwise agreed in writing the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

4.6.5 Claims for Concealed or Unknown Conditions. If conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature which 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, then notice by the observing party shall be given to the other party promptly before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect and Construction Manager will promptly investigate such conditions and, if 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 and/or Construction Manager determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, they shall so notify the Owner and Contractor in writing, stating the reasons. Claims by either party in opposition to such determination must be made within 21 days after the Architect and/or Construction Manager has given notice of the decision. If the Owner and Contractor cannot agree on an adjustment in the Contract Sum or Contract Time, the adjustment shall be referred to the Architect for initial determination, subject to further proceedings pursuant to Paragraph 4.7.

4.6.6 Claims for Additional Cost. If the Contractor wishes to make 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 Paragraph 10.3. 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, a claim shall be filed in accordance with the procedure established herein.

4.6.7 Claims for Additional Time.

4.6.7.1 If the Contractor wishes to make 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. In the case of a continuing delay, only one Claim is necessary.

4.6.7.2 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 and could not have been reasonably anticipated, and that weather conditions had an adverse effect on the scheduled construction.

4.6.8 Injury or Damage to Person or Property. If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, of any of the other party's employees or agents, or of others for whose acts such party is legally liable, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after first observance. The notice shall provide sufficient detail to enable the other party to investigate the matter. If a Claim for additional cost or time related to this Claim is to be asserted, it shall be filed as provided in Subparagraphs 4.6.6 or 4.6.7.

4.7 RESOLUTION OF CLAIMS AND DISPUTES

4.7.1 The Architect and/or Construction Manager will review Claims and take one or more of the following preliminary actions within ten days of receipt of a Claim: (1) request additional supporting data from the claimant, (2) submit a schedule to the parties indicating when the

Architect expects to take action, (3) reject the Claim in whole or in part, stating reasons for rejection, (4) recommend approval of the Claim by the other party or (5) suggest a compromise. The Architect and/or Construction Manager may also, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim.

4.7.2 If a Claim has been resolved, the Architect and/or Construction Manager will prepare or obtain appropriate documentation.

4.7.3 If a Claim has not been resolved, the party making the Claim shall, within ten days after the preliminary response, take one or more of the following actions: (1) submit additional supporting data requested by the Architect and/or Construction Manager, (2) modify the initial Claim, or (3) notify the Architect and/or Construction Manager that the initial Claim stands.

4.7.4 If a Claim has not been resolved after consideration of the foregoing and of further evidence presented by the parties or requested by the Architect and/or Construction Manager, the parties be notified in writing that the decision will be made within seven days, which decision shall be final and binding on the parties but may be subject to litigation. Upon expiration of such time period, the Architect will render to the parties the Architect's written decision relative to the Claim, including any change in the Contract Sum or Contract Time or both. If there is a surety and there appears to be a possibility of a Contractor's default, the Architect may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

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 other Contractors or subcontractors of other Contractors.

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 after award of the Contract, shall furnish in writing to the Construction Manager for review by the Owner, Construction Manager and 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 Construction Manager will promptly reply to the Contractor in writing stating whether or not the Owner, Construction Manager or Architect, after due investigation, has reasonable objection to any such proposed person or entity. Failure of the Construction Manager to reply with reasonable promptness shall constitute notice of no reasonable objection.

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

5.2.3 If the Owner, Construction Manager or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner, Construction Manager or Architect has no reasonable objection. The Contract Sum shall be increased or decreased by the difference in cost occasioned by such change and an appropriate Change Order shall be issued. However, no increase in the Contract Sum shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

5.2.4 The Contractor shall not change a Subcontractor, person or entity previously selected if the Owner, Construction Manager or Architect makes reasonable objection to such change.

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 which the Contractor, by these Documents, assumes toward the Owner, Construction Manager and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner, Construction Manager 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 which may be at variance with the Contract Documents. Subcontractors shall similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

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

- 1.** assignment is effective only after termination of the Contract by the Owner for cause pursuant to Paragraph 14.2 and only for those subcontract agreements which the Owner accepts by notifying the Subcontractor in writing; and
- 2.** assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

5.4.2 If the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted.

ARTICLE 6
CONSTRUCTION BY OWNER OR BY OTHER CONTRACTORS

6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION WITH OWN FORCES AND TO AWARD OTHER CONTRACTS

6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, which include persons or entities under separate contracts not administered by the Construction Manager. The Owner further reserves the right to award other 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 elsewhere in the Contract Documents.

6.1.2 When the Owner performs construction or operations with the Owner's own forces including persons or entities under separate contracts not administered by the Construction Manager, the Owner shall provide for coordination of such forces with the Work of the Contractor, who shall cooperate with them.

6.1.3 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 which apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in this Article 6 and in Articles 3, 10, 11 and 12.

6.2 MUTUAL RESPONSIBILITY

6.2.1 The Contractor shall afford the Owner's own forces, Construction Manager and other 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's own forces or other Contractors, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Construction Manager and 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 own forces or other 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.

6.2.3 Costs caused by delays or by improperly timed activities or defective construction shall be borne by the party responsible therefore.

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

6.2.5 Claims and other disputes and matters in question between the Contractor and other Contractors shall be subject to the provisions of Paragraph 4.6, provided the other Contractors have reciprocal obligations.

6.2.6 The Owner and other Contractors shall have the same responsibilities for cutting and patching as are described for the Contractor in Paragraph 3.14.

6.3 OWNER'S RIGHT TO CLEAN UP

6.3.1 If a dispute arises among the Contractor, other 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 as described in Paragraph 3.15, the Owner may clean up and allocate the cost among those responsible as the Construction Manager, in consultation with the Architect, determines to be just.

ARTICLE 7 **CHANGES IN THE WORK**

7.1 CHANGES

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, Construction Manager, Architect and Contractor. A construction Change Directive requires agreement by the Owner, Construction Manager and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect and or Construction Manager alone, if the cost of the change does not exceed \$1,000.

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.

7.1.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are so changed in a proposed Change Order or Construction Change Directive 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.

7.2 CHANGE ORDERS

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

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

7.2.2 Methods used in determining adjustments to the Contract Sum may include those listed in Subparagraph 7.3.3.

7.3 CONSTRUCTION CHANGE DIRECTIVES

7.3.1 A Construction Change Directive is a written order prepared by the Construction Manager and signed by the Owner, Construction Manager and Architect, directing a change in the Work and stating a proposed basis for adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may, via a 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.

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 an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee, or
- .4 as provided in Subparagraph 7.3.6.

7.3.4 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Construction Manager and 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 and Contract Time.

7.3.5 A Construction Change Directive signed by the Contractor indicates the agreement of the Contractor therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

7.3.6 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the method and the adjustment shall be determined by the Construction Manager on the basis of reasonable expenditures and savings of those performing the Work attributable to the changes, including, in case of an increase in the Contract Sum, a reasonable allowance for overhead and profit. In such case, and also under Clause 7.3.3.3, the Contractor shall keep and present, in such form as the Construction Manager may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Subparagraph 7.3.6 shall be limited to the following:

- .1 costs of labor, including social security 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, whether rented from the Contractor or others;
- .4 additional costs of supervision and field office personnel directly attributable to the change.

7.3.7 Pending final determination of cost to the Owner, amounts not in dispute may be included in Applications for Payment. The amount of credit to be allowed by the Contractor to the Owner for a deletion or change which results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Construction Manager. 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.

7.3.8 If the Owner and Contractor do not agree with the adjustment in Contract Time or the method for determining it, the adjustment or the method shall be referred to the Construction Manager for determination.

7.3.9 When the Owner and Contractor agree with the determination made by the Construction Manager concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately issued through the Construction Manager and shall be recorded by preparation and execution of an appropriate Change Order.

7.4 MINOR CHANGES IN THE WORK

7.4.1 The Architect and/or Construction Manager will have 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 shall be effected by written order issued through the Construction Manager and shall be binding on the 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 Agreement. The date shall not be postponed by the failure to act of the Contractor or of persons or entities for whom the Contractor is responsible.

8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Paragraph 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 Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, 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. The date of commencement of the Work shall not be changed by the effective date of such insurance. Unless the date of commencement is established by a notice to proceed given by the Owner, the Contractor shall notify the Owner in writing not less than five days or other agreed period before commencing the Work to permit the timely filing of mortgages, mechanic's liens and other security interests.

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

8.3 DELAYS AND EXTENSIONS OF TIME

8.3.1 If the Contractor is delayed at any time in progress of the Work by an act or neglect of the Owner's own forces, Construction Manager, Architect, any of the other Contractors or an employee of any of them, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control, or by other causes which the Architect, based on the recommendation of the Construction Manager, determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect and Construction Manager may determine.

8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Paragraph 4.6.

8.3.3 No delay in the time for the completion of the work or in the progress of the work shall result in any liability on the part of the Owner. No additional monies shall be due from the Owner as a result of any delay in the time for the completion of the work or in the progress of the work, including, but not limited to, for claimed additional expenses, overhead, profits, and compensation.

ARTICLE 9

PAYMENTS AND COMPLETION

9.1 CONTRACT SUM

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

9.2 SCHEDULE OF VALUES

9.2.1 Before the first Application for Payment, the Contractor shall submit to the Architect, through the Construction Manager, a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Construction Manager and Architect may require. This schedule, unless objected to by the Construction Manager or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

9.3 APPLICATIONS FOR PAYMENT

9.3.1 At least fifteen days before the date established for each progress payment, the Contractor shall submit to the Construction Manager an itemized Application for Payment for Work completed in accordance with the schedule of values. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner, Construction Manager or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and reflecting retainage, if provided for elsewhere in the Contract Documents.

9.3.1.1 Such applications may include requests for payment on account of changes in the Work which have been properly authorized by Construction Change Directives but not yet included in Change Orders.

9.3.1.2 Such applications may not include requests for payment of amounts the Contractor does not intend to pay to a Subcontractor or material supplier because of a dispute or other reason.

9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent

incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the 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 applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests and 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.

9.4 CERTIFICATES FOR PAYMENT

9.4.1 The Construction Manager will assemble a Project Application for Payment by combining the Contractor's applications with similar applications for progress payments from other Contractors and, after certifying the amounts due on such applications, forward them to the Architect within seven days.

9.4.2 Within seven days after the Architect's receipt of the Project Application for Payment, the Construction Manager and Architect will either issue to the Owner a Project Certificate for Payment, with a copy to the Contractor, for such amounts as the Construction Manager and Architect determine is properly due, or notify the Contractor and Owner in writing of the Construction Manager's and Architect's reasons for withholding certification in whole or in part as provided in Subparagraph 9.5.1. Such notification will be forwarded to the Contractor by the Construction Manager.

9.4.3 The issuance of a separate Certificate for Payment or a Project Certificate for Payment will constitute representations made separately by the Construction Manager and Architect to the Owner, based on their individual observations at the site and the data comprising the Application for Payment submitted by the Contractor, that the Work has progressed to the point indicated and that, to the best of the Construction Manager's and Architect's knowledge, information and belief, 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 minor deviations from the Contract Documents correctable prior to completion and to specific qualifications expressed by the Construction Manager or Architect. The issuance of a separate Certificate for Payment or a Project Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a separate Certificate for Payment or a Project Certificate for Payment will not be a representation that the Construction Manager or Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed the Contractor's 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 Construction Manager or Architect may decide not to certify payment and may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Construction Manager's or Architect's opinion the representations to the Owner required by Subparagraph 9.4.3 cannot be made. If the Construction Manager or Architect is unable to certify payment in the amount of the Application, the Construction Manager or Architect will notify the Contractor and Owner as provided in Subparagraph 9.4.2. If the Contractor, Construction Manager and Architect cannot agree on a revised amount, the Construction Manager and Architect will promptly issue a Certificate for Payment for the amount for which the Construction Manager and Architect are able to make such representations to the Owner. The Construction Manager or Architect may also decide not to certify payment or, because of subsequently discovered evidence or subsequent observations, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Construction Manager's or Architect's opinion to protect the Owner from loss because of:

- .1** defective Work not remedied;
- .2** third party claims filed or reasonable evidence indicating probable filing of such claims;
- .3** failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4** reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5** damage to the owner or another contractor;
- .6** reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7** persistent failure to carry out the Work in accordance with the Contract Documents.

9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

9.6 PROGRESS PAYMENTS

9.6.1 After the Construction Manager and Architect have issued a Project Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Construction Manager and Architect.

9.6.2 The Contractor shall promptly pay each Subcontractor, upon receipt of payment from the owner, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work the amount to which said Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of such Subcontractor's portion of the Work. The

Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in similar manner.

9.6.3 The Construction Manager 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 Owner, Construction Manager and Architect on account of portions of the Work done by such Subcontractor.

9.6.4 Neither the Owner, Construction Manager 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 Payment to material suppliers shall be treated in a manner similar to that provided in Subparagraph 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.

9.7 FAILURE OF PAYMENT

9.7.1 If, through no fault of the Contractor, (1) the Construction Manager and Architect do not issue a Project Certificate for Payment within fourteen days after the Construction Manager's receipt of the Contractor's Application for Payment, or (2) the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Construction Manager and Architect or awarded by arbitration, then the Contractor may, upon seven additional days' written notice to the Owner, Construction Manager and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down delay and start-up, which shall be accomplished as provided in Article 7.

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 the Owner can occupy or utilize the Work for its intended use.

9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor and Construction Manager shall jointly prepare and submit to the Architect and Construction Manager a comprehensive list of items to be completed or corrected. The Contractor shall proceed promptly to complete and correct items on the list. 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. Upon receipt of the list, the Architect, assisted by the Construction Manager, will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the inspection discloses any item, whether or not included on the list, which is not in accordance with the requirements of the Contract Documents, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. The Contractor shall then submit a request for another inspection by the Architect, assisted by the Construction Manager, to determine Substantial Completion. When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of

Substantial Completion which 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. 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.

9.8.3 Upon Substantial Completion of the Work or designated portion thereof and upon application by the Contractor and certification by the Construction manager and Architect, the Owner shall make payment, reflecting adjustment in retainage, if any, for such Work or portion thereof as provided in the Contract Documents.

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 and authorized by public authorities having jurisdiction over the Work. 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 and Construction Manager shall jointly prepare and submit a list to the Architect as provided under Subparagraph 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 after consultation with the Construction Manager.

9.9.2 Immediately prior to such partial occupancy or use, the Owner, Construction Manager, 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 completion of the Work, the Contractor shall forward to the Construction Manager a written notice that the Work is ready for final inspection and acceptance and shall also forward to the Construction Manager a final Contractor's Application for Payment. Upon receipt, the Construction Manager will forward the notice and Application to the Architect who will promptly make such inspection. When the Architect, based on the recommendation of the Construction Manager, finds the Work acceptable under the Contract Documents and the Contract fully performed, the Construction Manager and Architect will promptly issue a final Certificate for Payment stating that to the best of their knowledge, information and belief, and on

the basis of their observations 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 said final Certificate is due and payable. The Construction Manager's and Architect's final Certificate for Payment will constitute a further representation that conditions listed in Subparagraph 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 through the Construction Manager (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 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 and (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. 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 lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, 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 Construction Manager and Architect so confirm, the Owner shall, upon application by the Contractor and certification by the Construction Manager and 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 retentage 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 through the Construction Manager 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.

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. The Contractor shall submit the Contractor's safety program to the Construction Manager for review and coordination with the safety programs of other Contractors

10.1.2 In the event the Contractor encounters on the site material reasonably believed to be asbestos or polychlorinated biphenyl (PCB) which has not been rendered harmless, the Contractor shall immediately stop Work in the area affected and report the condition to the Owner, Construction Manager and Architect in writing. The Work in the affected area shall not thereafter be resumed except by written agreement of the Owner and Contractor if in fact the material is asbestos or polychlorinated biphenyl (PCB) and has not been rendered harmless. The Work in the affected area shall be resumed in the absence of asbestos or polychlorinated biphenyl (PCB) or when it has been rendered harmless by written agreement of the Owner and Contractor, or in accordance with final determination by the Architect.

10.1.3 The Contractor shall not be required pursuant to Article 7 to perform without consent any Work relating to asbestos or polychlorinated biphenyl (PCB).
Subparagraph 10.1.4.

10.1.4 If reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance 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, Construction Manager and Architect in writing. The Owner, Contractor, Construction Manager and Architect shall then proceed in the same manner described in Subparagraph 10.1.2.

10.1.5 The Owner shall be responsible for obtaining the services of a licensed laboratory to verify a 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 verify that it has been rendered harmless.

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;
- .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; and
- .4** construction or operations by the Owner or other Contractors.

10.2.2 The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

10.2.3 The Contractor shall 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.

10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

10.2.5 The Contractor shall promptly remedy damage and loss to property referred to in Clauses 10.2.1.2, 10.2.1.3, and 10.2.1.4 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. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Paragraph 3.18.

10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent, unless otherwise designated by the Contractor in writing to the Owner, Construction Manager 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 its safety.

10.3 EMERGENCIES

10.3.1 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 Paragraph 4.6 and Article 7.

ARTICLE 11

INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the State of Delaware such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's 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 which 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 which are sustained (1) by a person as a result of an offense directly or indirectly related to employment of such person by the Contractor, or (2) by another person;
- .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; and

.7 claims involving contractual liability insurance applicable to the Contractor's obligations under Paragraph 3.18.

11.1.2 The insurance required by Subparagraph 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 and 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.

11.1.3 Certificates of insurance acceptable to the Owner shall be submitted to the Construction Manager for transmittal to the Owner with a copy to the Architect prior to commencement of the Work. These certificates and the insurance policies required by this Paragraph 11.1 shall contain a provision that coverage's afforded under the policies will not be canceled or allowed to expire until at least 30 days prior written notice has been given to the Owner. If any of the foregoing insurance coverage's are required to remain in force after final payment and are reasonably available, an additional certificate evidencing continuation of such coverage shall be submitted with the final Application for Payment as required by Subparagraph 9.10.2. Information concerning reduction of coverage shall be furnished by the Contractor with reasonable promptness in accordance with the contractor's information and belief.

11.2 OWNER'S LIABILITY INSURANCE

11.2.1 The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance. Optionally, the Owner may purchase and maintain other insurance for self-protection against claims which may arise from operations under the Contract. The Contractor shall not be responsible for purchasing and maintaining this optional Owner's liability insurance unless specifically required by the Contract Documents.

11.3 PERFORMANCE BOND AND PAYMENT BOND

11.3.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising there under as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

11.3.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall permit a copy to be made.

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 Construction Manager's or Architect's request or requirements specifically expressed in the Contract Documents, it must, if required in writing by either, be uncovered for their observation and be replaced at the Contractor's expense without change in the Contract Time.

12.1.2 If a portion of the work has been covered which the Construction Manager or Architect has not specifically requested to observe prior to its being covered, the Construction Manager or 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 charged to the Owner. If such Work is not in accordance with

the Contract Documents, the Contractor shall pay such costs unless the condition was caused by the Owner or one of the other Contractors in which event the Owner shall be responsible for payment of such costs.

12.2 CORRECTION OF WORK

12.2.1 The Contractor shall promptly correct Work rejected by the Construction Manager or Architect or failing to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed or completed. the Contractor shall bear costs of correcting such rejected Work, including additional testing and inspections and compensation for the Construction Manager's and Architect's services and expenses made necessary thereby.

12.2.2 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 Subparagraph 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so. This period of one year 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 performance of the Work. This obligation under this Subparagraph 12.2.2 shall survive acceptance of the Work under the Contract and termination of the Contract. The Owner shall give such notice promptly after discovery of the condition.

12.2.3 The Contractor shall remove from the site portions of the Work which 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 If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Paragraph 2.4. If the Contractor does not proceed with correction of such nonconforming Work within a reasonable time fixed by written notice from the Architect issued through the Construction Manager, the Owner may remove it and store the salvable materials or equipment at the Contractor's expense. If the Contractor does not pay costs of such removal and storage within ten days after written notice, the Owner may upon ten additional days written notice sell such materials and equipment at auction or at private sale and shall account for the proceeds thereof, after deducting costs and damages that should have been borne by the Contractor including compensation for the Construction Manager's and Architect's services and expenses made necessary thereby. If such proceeds of sale do not cover costs which the Contractor should have borne, the Contract Sum shall be reduced by the deficiency. If payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner.

12.2.5 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or other Contractors caused by the Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents.

12.2.6 Nothing contained in this Paragraph 12.2 shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the time period of one year as described in Subparagraph 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

12.3.1 If the Owner prefers to accept Work which 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

13.1.1 The Contract shall be governed by the law of the State of Delaware.

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. 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.

13.3 WRITTEN NOTICE

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

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, Construction Manager, 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 required by the Contract Documents or by laws, ordinances, rules, regulations or orders of public authorities having jurisdiction shall be made at an appropriate time. 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

Construction Manager and Architect timely notice of when and where tests and inspections are to be made so the Construction Manager and Architect may observe such procedures. The Owner shall bear costs of tests, inspections or approvals which do not become requirements until after bids are received or negotiations concluded.

13.5.2 If the Construction Manager, Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing inspection or approval not included under Subparagraph 13.5.1, the Construction Manager and 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 Construction Manager and Architect of when and where tests and inspections are to be made so the Construction Manager and Architect may observe such procedures. The Owner shall bear such costs, except as provided in Subparagraph 13.5.3.

13.5.3 If such procedures for testing, inspection or approval under Subparagraphs 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, the Contractor shall bear all costs made necessary by such failure, including those of repeated procedures and compensation for the Construction Manager's and Architect's services and expenses.

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 Construction Manager for transmittal to the Architect.

13.5.5 If the Construction Manager or Architect is to observe tests, inspections or approvals required by the Contract Documents, the Construction Manager or Architect will do so with reasonable promptness 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

13.6.1 Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located, but not to exceed 8% per annum.

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 90 days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor, for any of the following reasons:

- .1** issuance of an order of a court or other public authority having jurisdiction;
- .2** an act of government, such as a declaration of national emergency, making material unavailable;
- .3** because the Construction Manager or Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for

withholding certification as provided in Subparagraph 9.4.2 or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents.

14.1.2 If one of the above reasons exists, the Contractor may, upon seven additional days' written notice to the Owner, Construction Manager 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, including reasonable overhead, profit and damages.

14.1.3 If the Work is stopped for a period of 90 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 persistently 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 additional days' written notice to the Owner, Construction Manager and Architect, terminate the contract and recover from the Owner as provided in Subparagraph 14.1.2.

14.2 TERMINATION BY THE OWNER FOR CAUSE

14.2.1 The Owner may 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 laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

14.2.2 When any of the above reasons exist, the Owner, after consultation with the Construction Manager, and upon certification by the Architect 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 days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 take possession of the site and of all materials, equipment, tools and construction equipment and machinery thereon owned by the Contractor;
- .2 accept assignment of subcontracts pursuant to Paragraph 5.4; and
- .3 finish the Work by whatever reasonable method the Owner may deem expedient.

14.2.3 When the Owner terminates the Contract for one of the reasons stated in Subparagraph 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 Construction Manager's and Architect's services and expenses made necessary thereby, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the

Contractor or Owner, as the case may be, shall, upon application, be certified by the Architect after consultation with the Construction Manager, 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, 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 An adjustment shall be made for increases in the cost of performance of the Contract, including profit on the increased cost of performance, caused by suspension, delay, or interruption. 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 this Contract.

14.3.3 Adjustments made in the cost of performance may have a mutually agreed fixed or percentage fee.

END

STATE OF DELAWARE
DEPARTMENT OF LABOR
DIVISION OF INDUSTRIAL AFFAIRS
OFFICE OF LABOR LAW ENFORCEMENT
PHONE: (302) 451-3423

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SUITE 104
NEWARK, DE 19702

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NEWARK, DE 19702

PREVAILING WAGES FOR BUILDING CONSTRUCTION EFFECTIVE MARCH 15, 2011

CLASSIFICATION	NEW CASTLE	KENT	SUSSEX
ASBESTOS WORKERS	27.64	37.58	39.20
BOILERMAKERS	63.07	17.85	48.83
BRICKLAYERS	44.98	44.98	44.98
CARPENTERS	48.31	48.31	38.62
CEMENT FINISHERS	40.38	29.11	21.20
ELECTRICAL LINE WORKERS	43.49	37.29	28.44
ELECTRICIANS	57.10	57.10	57.10
ELEVATOR CONSTRUCTORS	73.98	40.93	30.55
GLAZIERS	61.24	61.20	54.20
INSULATORS	49.38	49.38	49.38
IRON WORKERS	58.29	58.29	58.29
LABORERS	37.20	37.20	37.20
MILLWRIGHTS	59.65	59.65	46.36
PAINTERS	39.37	39.37	39.37
PILEDRIVERS	65.27	37.64	30.45
PLASTERERS	21.61	21.61	17.50
PLUMBERS/PIPEFITTERS/STEAMFITTERS	57.25	39.39	44.26
POWER EQUIPMENT OPERATORS	54.31	54.31	24.13
ROOFERS-COMPOSITION	21.09	20.46	17.09
ROOFERS-SHINGLE/SLATE/TILE	17.59	17.50	16.45
SHEET METAL WORKERS	61.24	49.56	46.52
SOFT FLOOR LAYERS	44.17	44.17	42.31
SPRINKLER FITTERS	50.45	50.45	50.45
TERRAZZO/MARBLE/TILE FINISHERS	49.70	49.70	45.45
TERRAZZO/MARBLE/TILE SETTERS	57.18	57.18	52.63
TRUCK DRIVERS	22.79	23.89	20.03

CERTIFIED: _____

BY: _____
ADMINISTRATOR, OFFICE OF LABOR LAW ENFORCEMENT

NOTE: THESE RATES ARE PROMULGATED AND ENFORCED PURSUANT TO THE PREVAILING WAGE REGULATIONS ADOPTED BY THE DEPARTMENT OF LABOR ON APRIL 3, 1992.

CLASSIFICATIONS OF WORKERS ARE DETERMINED BY THE DEPARTMENT OF LABOR. FOR ASSISTANCE IN CLASSIFYING WORKERS, OR FOR A COPY OF THE REGULATIONS OR CLASSIFICATIONS, PHONE (302) 451-3423.

NON-REGISTERED APPRENTICES MUST BE PAID THE MECHANIC'S RATE.

THESE RATES ARE BEING PROVIDED IN ACCORDANCE WITH DELAWARE'S FREEDOM OF INFORMATION ACT.

THEY ARE NOT INTENDED TO APPLY TO ANY SPECIFIC PROJECT.

SITE CONDITIONS



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- 1.9 Construction Equipment
- 1.10 Access
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- 1.12 Ladders
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SITE CONDITIONS

1 SAFETY

The special safety requirements listed herein shall not relieve Contractor from complying with the Occupational Safety and Health Act (OSHA) or any other contractual agreement, and are only noted to highlight potential problem areas.

1.1 Safety Requirements

Contractor shall comply with the safety program in effect at the work site. This program includes use of OSHA regulations, and other contract documents. Where these documents address the same subject, the more stringent requirement shall apply.

1.2 Safety Program

Before starting work, Contractor shall submit a written safety program that all Contractors' employees must follow while on the Campus. Minimum acceptable program shall meet OSHA requirements.

1.3 Deleted

1.4 Safety Orientation

1.4.1 Contractor shall conduct a safety orientation, covering these Site Conditions, and other safety procedures covered at the pre-construction meeting for each Contractor employee before he/she begins work on site.

1.4.2 The cost for Contractor's employees to attend this orientation shall be included in Contractor's price.

1.4.3 DSU will furnish a "site specific" safety orientation prior to Contractor being allowed to work on site. The contents of these orientations will be site-specific hazards, unique area operating conditions or requirements, and DSU safety standards. Prime contractors shall ensure their tier subcontractors are made aware of these requires and work accordingly. The contractor is not relieved of responsibility for providing safety training to employees or subcontractors performing work that may be required by OSHA for work defined in the contract documents.

1.4.4 All contract employees performing work on or for Delaware State University managed projects must have basic knowledge of job site safety requirements.

1.5 Safety Training

Contractor's job supervisor shall ensure that safety training is carried out before personnel start work and continues throughout all phases of the work.

1.6 Protective Clothing

1.6.1 Contractor's personnel shall wear hard hats, industrial quality shoes, and safety glasses with side shields (as required by equipment/materials manufactures recommendations).

1.6.2 Personal clothing will be in good repair (no holes), shirts shall cover the shoulders and clothing will contain no offensive language, cartoons, etc....

- 1.6.3 Face shields and welding visors shall be of types that attach to the hard hat when hard hats are required.
- 1.6.4 Gloves suitable for the job being performed shall be worn unless the job cannot be done with gloves or unless wearing gloves increases the hazard.
- 1.6.5 These items shall be furnished at no cost to DSU.

1.7 Respiratory Equipment

Before any employee starts work requiring use of respiratory protective equipment, Contractor shall furnish DSU with proof of compliance with OSHA Sections 1926.103 and 1910.134, including the following documentation.

- 1.7.1 Physician's approval for the employee to use respiratory protective equipment. A fit test record for type of respirator the employee is to use.
- 1.7.2 Contractor shall furnish emergency rescue respirators and equipment required for work inside a vessel or confined space (closed chamber).

1.8 Barricades

Contractor shall furnish, erect, maintain, and dismantle all barricades w/signage required for its work areas. Barricade tape shall be yellow w/black center unless otherwise indicated.

- 1.8.1 Barricades are required:
 - Around all work areas.
 - Around crane swing area.
 - To define outer limits of high noise areas. Post appropriate signs.
 - To define areas of overhead work.
 - Around excavations. Provide wood or plastic snow fencing.
 - For road closures. Barricades may be sawhorse type. Post appropriate signs. Provide flashing yellow lights if barricades are left overnight. Notify DSU Construction, 48 hours before closing off any road.
- 1.8.2 Warning (tape and stand) barricades - Tape shall be supported only by stands or posts acceptable to DSU; do not tie to columns, pipes, valves, material drums, vegetation, etc. Stands or posts subjected to wind shall be weighted or otherwise secured so they remain erect.
- 1.8.3 Protective (rigid) barricades - Shall consist of guardrail and midrail meeting OSHA definition of "standard railing" {OSHA Section 1926.500(f)}, capable of supporting a 200 pound force in any direction with minimal deflection of 3" in any direction.
- 1.8.4 Barricades around work areas shall be identified with signs giving the name and telephone number of a person to contact in emergencies.

1.9 Construction Equipment

- 1.9.1 Contractor and all tier subcontractors shall comply with provisions of the job site.
- 1.9.2 Major equipment is defined as cranes, aerial work platforms, boom trucks, and bucket trucks.
- 1.9.3 Contractor shall notify DSU Construction prior to use of any lifting equipment, inspection of equipment must be accomplished. Costs resulting from delays for failure to provide proper notice shall be to Contractor's account.
- 1.9.3.1 Cranes, forklifts, trucks, and similar construction equipment shall not be left unattended unless shutdown and secured to prevent unintentional movement.
- 1.9.3.2 All vehicles, except those primarily configured for passengers (e.g., cars, station wagons, vans, and light duty pick-up trucks) must have the engine turned off, the parking brake set, the transmission in gear or "park" when parked and unattended. "Unattended" means with no one in the cab or in a position to have complete control over vehicular motion, and is intended to apply primarily to delivery vehicles and concrete trucks. A running engine will be permitted where necessary for an auxiliary power source, provided the other requirements noted above are met.
- 1.9.3.3 Semi-trailers to be loaded or unloaded with the tractor disconnected shall have a wheel chocked in opposite directions.
- 1.9.3.4 Contractor shall furnish chocks for subcontractors, suppliers, and material deliveries arriving at the site without their own chocks.
- 1.9.4 Truck-mounted, hydraulic telescoping boom cranes shall not be moved until the boom is fully retracted and lowered into the boom cradle, if provided, and the hook is secured in a tie-down lug at some point on the truck bed.
- 1.9.5 Modifications shall not be made to lifting equipment without the manufacturer's written permission. Each custom designed, job made lifting accessory (e.g., grabs, hooks, clamps, etc.) shall be marked to indicate the safe working load. {Reference OSHA Section 1926.251(a)(4)}.
- 1.9.6 Rigging from the buckets or booms of backhoes, front-end loaders, bulldozers, etc., to lay pipe, erect steel, pick and carry, etc., will not be permitted unless a properly installed and tested lifting eye or lug has been attached to the bucket or boom by the manufacturer, and lifting capacities and configurations are specified in the manufacturer's operating manual.
- 1.9.7 All earth moving and hauling equipment, and any vehicle or construction equipment shall be equipped with audible backup alarms.
- 1.9.8 Deleted

- 1.9.9 Contractor shall submit details of its proposed work platform and rigging method for DSU Construction's review before conducting any work from a platform suspended from a crane. Anti-two-block devices are required when using a hydraulic crane.
- 1.9.10 Access to, and egress from, crane cabs, material wagons, truck beds, crawler backhoes, etc., shall be achieved by built-in ladder and/or hand holds provided by the equipment manufacturer. If such means are not provided, Contractor shall provide a properly positioned and secured ladder or other approved method.
- 1.9.11 Contractor shall comply with the manufacture's and OSHA's requirements for aerial work platforms, man lifts, or bucket trucks.
- Operator shall be trained at Contractor's expense.
- 1.9.12 No one shall be permitted to operate a lifting device (material or personnel) unless they have been properly trained.
- 1.9.13 The manufacturer's operating instructions shall accompany the device.
- 1.9.14 Crane inspection records must be readily available and kept within the crane.
- 1.9.15 No later than 5 calendar days before the lift is scheduled to be made, Contractor shall submit, for DSU Construction's review, a rigging preplan for each lift.
- 1.9.16 The rigging pre-plan shall include:
- Manufacturer, model, and capacity of the crane(s)
 - Capacity charts
 - Working radius
 - Boom length
 - Weight of load including rigging
 - How the weight was determined
 - Number of parts of line to be used
 - Size and capacity of rigging hardware (slings, shackles, etc.)
- 1.9.17 Lifts over occupied buildings shall be made with the approval of DSU's construction representative. The area within the boom swing radius shall be evacuated and barricaded.
- 1.9.18 Noisy equipment, such as pavement breakers, high speed saws, etc., required in performance of the work, shall be checked and cleared 24 hours prior to use with DSU's construction representative.
- 1.10 Access**
Access to exit doors, electric or elevator panels, and fire extinguishers or other emergency equipment must not be blocked at any time.

1.11 Spray Painting

During spray painting operations where a hazardous warning is posted on the paint can label and controls are inadequate to prevent harmful exposure to employees, Contractor shall comply with OSHA Sections 1926.103 and 1910.134, at no additional cost to DSU.

1.12 Ladders

1.12.1 Contractor's qualified person shall inspect all ladders brought onto the job site. Ladders shall be visually inspected by the user before each use. Defective ladders shall be promptly removed from the site. Ladders without required labels shall not be used.

1.12.2 Folding (Trestle Type) and metal ladders are not permitted.

1.13 Scaffolds

Scaffolds shall comply with the requirements of OSHA. Competent person to provide tag-indicating status of scaffold (complete or incomplete).

1.14 Fall Protection

1.14.1 Protection is required to prevent personnel or material from falling through floor openings, wall openings, roof edges, stairways, elevator shafts, etc.

1.14.2 Before starting any elevated work, Contractor shall submit a fall prevention plan for DSU's review. As a minimum, the plan must include:

- A list of all anticipated tasks to be performed at elevated locations.
- The proposed method of fall protection for each task:
 - Elimination of fall hazards (through engineered means)
 - Prevention of falls (by changing work procedure/work environment)
 - Control of falls (through use of fall arrest equipment)
- Name(s) and qualifications of Contractor's competent person(s) relative to fall protection.
- Rescue Plan

1.14.3 Contractor shall provide a workable fall protection system (horizontal lifelines, retractable lifelines, nets, etc.) for all employees engaged in placing or installing grating and O-decking.

1.14.4 To the extent practical, personnel erecting, connecting or bolting up structural steel shall walk along the steel by straddling the member and walking on the bottom flange.

1.14.5 OSHA's fall protection standard requires fall protection to be implemented beginning at 6' above a lower level unless otherwise noted within OSHA.

- Steel Erections – 15'-30'
- Scaffolds – 10'

1.15 Ground Fault Protection

Contractor shall provide ground fault circuit interrupter protection for all cord sets, receptacles, and electrical tools and equipment connected by cord and plug which are used or available for use by employees.

1.16 Gas Cylinders

1.16.1 Compressed gas cylinders shall be properly secured on two-wheel hand trucks designed for this use. Compressed gas cylinders shall not be brought into buildings. Unless individual cylinders are equipped with regulating devices, they shall have the safety cap secured in place. All cylinders shall be maintained in the upright position and secured with a noncombustible material.

1.16.2 All burning rigs shall be broken down with regulators removed and protective caps screwed down hand tight at the end of work day.

1.17 Tool Inspection

All Contractor-furnished portable tools and equipment shall be maintained in safe working order and are subject to inspection at any time while on Campus. DSU retains the right to prohibit, or restrict, the use of tools and equipment determined to be in unsafe working condition.

1.18 Projecting Materials

Reinforcing steel or similar material projecting above horizontal surfaces shall be capped or otherwise protected to prevent the possibility of impaling personnel.

1.19 Personnel on Ductwork/Pipe/Conduit Racks

Contractor shall provide means of access and egress adjacent to the work area for personnel working above ductwork or in pipe/conduit racks. Walking on, crawling along, sitting on, or working from ductwork/rack will not be permitted.

1.20 Lockout Procedure

1.20.1 Contractor shall verify removal of and securing energy before starting work on any potential energy containing or electrical systems.

1.20.2 All installation and renovation work on power distribution systems operating at 480 volts or higher require both phase to phase and phase to ground megger testing to be performed. A qualified DSU representative may witness these megger tests. There shall be written documentation indicating the results of these tests.

1.20.3 All installation or renovation work performed on power distribution system operating at 480 volts or higher will require a complete written and DSU reviewed job plan. If any part of the job plan cannot be performed as written or if anything changes from the original job plan, work shall stop until a new job plan can be written and reviewed.

1.20.4 All electrical work shall be completed in accordance with NFPA-70E. These requirements also apply to all tier Contractors.

1.21 Safety Violations

1.21.1 Employees who violate safety requirements will be denied access to the Campus.

1.21.2 In the event of OSHA violations or unsafe practices involving imminent danger immediate action shall be taken to stop work and correct the hazardous situation. If violations continue or corrective actions are not taken after a reasonable period of time, DSU's option of terminating the contract in accordance with the General Conditions will be considered.

1.22 Reporting Injuries

1.22.1 Contractor shall immediately notify DSU of any injury or potentially serious hazard to personnel on the site. Each injury or incident shall be jointly investigated by Contractor's site supervisor and DSU's construction representative. Contractor shall submit a detailed report to DSU within 24 hours of the injury or incident.

1.22.2 Contractor's supervisor or foreman shall be available to provide information for development of a report.

1.22.3 Any contractor personnel that receive off-site medical treatment, upon returning to work, will report to DSU Construction Director before resuming work on the job-site.

1.23 Hazard Communication

1.23.1 Contractor and all tier one contractors shall comply with OSHA Hazard Communication Standard 1910.1200 and all applicable state and local hazard communication requirements.

- A copy of all MSDS (Material Safety Data Sheets) shall be available to DSU prior to start of work.

1.23.2 Contractor shall obtain DSU's approval before introducing any hazardous materials onto DSU's property. Such materials shall be properly labeled and strictly controlled. Storage and use must comply with the Material Safety Data Sheets.

2 FIRE PROTECTION

2.1 Procedures

Contractor shall observe job site fire, fume release, and disaster procedures. Contractor's job supervisor will be given a copy of and be oriented by DSU on the alarm and evacuation procedures and shall ensure that all Contractor's employees are thoroughly familiar with those procedures.

2.2 Smoking

2.2.1 Smoking will be permitted only in areas designated by DSU. Contractor shall furnish butt cans and fire extinguishers in such areas.

2.2.2 Smoking by a contractor employee in any non-designated area shall be considered cause to require Contractor to remove that employee from DSU's property.

2.3 Flammable Materials

Storage and use of flammable materials will be subject to DSU's agreement. OSHA-approved safety cabinets and cans shall be used for storing and dispensing flammable liquids and must have prior DSU's review. Gasoline powered tools or equipment are not permitted inside buildings.

2.4 Fire Extinguishers

Contractor shall furnish a minimum 10-pound fire extinguisher. The extinguishers shall be rated not less than 2A:40-BC and be maintained for the duration of the work. Discharged extinguishers shall be recharged or replaced as necessary.

2.5 Oil Rag Storage

2.5.1 Dirty and oily rags shall be kept in fireproof metal containers with self-closing lids and removed from premises daily.

2.5.2 Oil catch pans placed under pipe and conduit threading machines must be non-combustible: i.e., metal and filled with nonflammable absorbent material.

2.6 Protective Structures

Any plastic, tarpaulin, or other material used to construct a hut, tent, or similar protective structure, shall be flame retardant.

2.7 Burning and Welding Equipment

Flashback arrestors shall be an integral part of the oxy/fuel rig. FR11 or equivalent arrestors shall be installed at the torch inlet valves, and/or FR43 or equivalent arrestors at the regulators.

2.8 Powered Equipment

No gasoline or propane equipment is permitted in Buildings. All equipment to be air or electric operated.

3 CONSTRUCTION FACILITIES

3.1 Identification

Contractor shall post a sign, of a size and character consistent with the size, nature and duration of the contract, identifying its site headquarters, which may be an office, trailer, toolbox, or storage area.

3.2 Parking

3.2.1 Contractor's employees shall park in construction parking as designated by DSU. The contractor will be responsible to provide any special/alternative transportation, as appropriate, to ensure his employees site access. Contractor May be required to register for a parking pass for Parking Lot they are to use.

3.2.2 DSU must designate all storage or lay down areas in advance.

3.3 Site Access

Designated routes will be established for access to the work area and for movement of material and equipment. Movement of material and equipment shall be scheduled with DSU.

3.4 Deleted

3.5 Telephone

Contractor shall arrange telephone service, as needed, through the local telephone or otherwise arranged with DSU representative.

3.6 Drinking Water and Sanitary Facilities

Contractor shall provide drinking water and sanitary facilities to satisfy its employees' needs in compliance with OSHA requirements or as otherwise arranged with DSU representative.

3.7 Water

3.7.1 Water for construction is available within 1000 feet.

3.7.2 DSU will furnish water for construction and testing purposes at one 1 inch outlet within/approximately 500 feet from the work area. Contractor shall make all connections and run any hoses and pipe extension required.

3.7.3 Fire hydrants shall not be used as a source of water without DSU's prior written approval.

3.8 Electric Power

DSU will furnish 120 volt, 60 Hertz, 20 amp electrical power at one location approximately 1000 feet from the work area for TC power and small tools. Contractor shall make all connections (3-wire grounded) and run any extensions required. Contractor needs to provide an electric source in excess of 110 volts, 60 hertz, 20 amp. (i.e. welding machines, concrete saws, etc.)

3.9 Compressed Air

Compressed air is not available in the work area. Contractors shall provide their own source of compressed air.

3.10 Campus Facilities

Contractor's personnel will not be permitted to use Campus facilities such as lunchroom, change areas, or toilets unless previously arranged with DSU.

4 HOUSEKEEPING

4.1 Clean Up

4.1.1 Contractor shall keep Job site in an organized and clean condition.

4.1.2 Contractor shall take all necessary precautions to prevent dirt, dust, etc., from entering operating areas. Occupied areas during construction must be protected from all work that will produce dust. Erect (6) mil plastic walls with sealed top and bottom plates to contain dust in work area. Remove upon completion of the work. Plastic to be fire resistant.

- 4.1.3 During the course of construction, alteration, or repairs, all debris shall be kept cleared from work areas, passageways, and stairs in and around buildings or other structures.
- 4.1.4 Contractor shall clean up all work areas. Debris and scrap material will not be allowed to accumulate in any work area. As work progresses the area is to be kept clean at all times during the day - vacuum all dust as necessary. Contractor shall remove off site all scrap materials and waste on a daily basis.
- 4.1.5 Should Contractor fail to keep its work areas orderly, DSU will perform this work on a time-and-material basis and back-charge Contractor.
- 4.1.6 Concrete trucks and chutes shall be washed out into 55-gallon drums. Contractor shall provide drums. Disposal of drums in a suitable landfill shall be included in Contractor's price.

4.2 Waste Material Control

- 4.2.1 Waste equipment oil shall be disposed off site.
- 4.2.2 Contractor shall ensure that its operations comply with the oil spill prevention provisions of 40 CFR. 112. Further, the spillage of oil or any other foreign substance onto the ground or into swamps, trenches or ditches is strictly prohibited.
- 4.2.3 Contractor shall provide metal containers for the collection and separation of waste, trash, and other refuse. Containers used for garbage, acids, harmful dust, etc., shall be equipped with covers. Contractor shall not use Campus dumpsters.

4.3 Road Maintenance

Contractor shall maintain roads and other Campus areas affected by its operations in a clean and uncluttered condition at all times. Any dirt, mud, concrete, debris, spoil, refuse, etc., shall be cleaned up and removed immediately.

4.4 Spill Notification and Protection

- 4.4.1 Contractor shall maintain filter media around all storm drains prior to commencement of work in areas adjacent to drains.
Contractor shall contain spills immediately and notify the DSU site representative as soon as possible.

4.5 Roof Protection

- 4.5.1 Contractor is required to provide necessary measures to protect roofing from damage due to contractor's activities on rooftops. Also provide proper house-keeping to avoid reliance on protection to keep roof intact. Inspect and report condition on a weekly basis.

5 WORKING CONDITIONS

5.1 Visitor Control

All visitors shall be escorted by Contractor's supervision, and are to wear required PPE.

5.2 Coordination with Others

Where Contractor's work must be performed in conjunction with work by others, Contractor shall cooperate with DSU in scheduling, coordinating, and sequencing its work with that of others so all work may proceed with minimal interference or delay.

5.3 Co-Occupancy

Contractor shall provide all measures required to protect existing facilities and work performed by others from damage due to Contractor's (including its tier subcontractors) operations or negligence. DSU may suspend Contractor's operation until such protective measures are provided, and the cost for stand-by of Contractor's, its tier subcontractors, or other contractor's men and equipment shall be Contractor's account.

5.4 Construction Planning

5.4.1 Work plans will be required on a project basis.

5.4.2 Close proximity plan will be required for use of construction equipment over, or within 15 feet of, any overhead electric power line, process pipe, or service pipe. Contractor shall develop this plan and submit for DSU's Review.

5.4.3 Vessel or confined space entry plan will be required for any work inside a vessel or confined space (i.e., any area which must be entered through a restricted opening, such as tanks, vessels, ductwork, vessel skirts, manholes, etc.). Contractor shall develop and submit job plan sufficiently in advance to allow all required reviews to be obtained before work is scheduled to start. Contractor shall furnish all protective and emergency equipment, and atmospheric testing equipment. Continuous monitoring equipment shall have audible alarms.

5.4.4 An excavation plan will be required for each area to be excavated. Contractor shall comply with all restrictions stated in the plan. Contractor shall hand excavate to locate all identified underground services before any mechanical excavating equipment will be permitted to be used.

5.4.5 Roof, Wall And Floor Penetrations require Authorization

5.4.5.1 Contractor is responsible for cutting and patching of any roof penetrations and the weather tightness of these penetration(s). Work to be performed by qualified personnel including coordination with manufacturer of roof so existing warranties are not disrupted.

5.5 Material Shipment and Storage

5.5.1 Only truck shipments to Campus are acceptable. Contractor shall coordinate shipments with DSU to avoid interfering with Campus operations. Access for truck shipments to the storage and work areas is through the contractor's gate, which has no overhead obstructions. Contractor shall unload and handle its material. DSU Receiving will not accept deliveries for the Contractor.

5.5.2 Limited ground space will be made available to Contractor by DSU approximately 500 feet from the work area.

5.5.3 Material being furnished by DSU will be made available to Contractor in an area approximately 500 feet from the work area.

5.6 Prohibited Items

Food, beverages, and chewing tobacco shall not be consumed in the work area.

5.7 Tool and Equipment Control

DSU will not be responsible for the loss or theft, either on the Campus, of Contractor's tools or equipment, or Contractor employees' personal belongings.

5.8 Excavation Requirements

5.8.1 Twenty-four (24) hours before Contractor personnel first enter any excavation, trench, hole, etc., over five (5) feet deep, Contractor competent person will inspect the side slopes, shoring, or sheeting for compliance with OSHA Section 1926.652. Contractor shall correct all noted discrepancies before allowing work to continue.

5.8.2 Contractor shall comply with OSHA 1926.652 "Competent Person" - This designated person shall be present at all times during the excavating process.

5.9 Non- Harassment Policy

Everyone is entitled to a work environment free from sexual, racial or other distasteful discrimination. Contractor shall insure that no one will be discriminated against in the workplace. Disrespect for any employee, sexual harassment, offensive or insulting behavior is considered unacceptable and may result in termination.

Contact Delaware Engineering & Design
Corporation for Bid Documents 302-738-7172

CAMPUS BUILDINGS AND FACILITIES

BLDG NO.	BUILDING NAME	BLDG NO.	BUILDING NAME
1.	THE WELCOME CENTER	29.	R.S. GROSSLEY HALL
2.	CAMPUS PEDESTRIAN MALL	30.	WILLIAM C. JASON LIBRARY
3.	STUDENT CENTER	31.	BANK OF AMERICA BUILDING
4.	ALUMNI STADIUM	32.	EDUCATION & HUMANITIES BUILDING
5.	UNIVERSITY VILLAGE NORTH	33.	LUNA I. MISHOE SCIENCE CENTER NORTH
6.	UNIVERSITY VILLAGE SOUTH	34.	LUNA I. MISHOE SCIENCE CENTER SOUTH
7.	ATHLETICS CENTER	35.	ATHLETICS CENTER
8.	CENTER FOR TEACHING AND LEARNING	36.	JOHN R. PRICE BUILDING
9.	ETV BUILDING	37.	ETV BUILDING
10.	PUBLIC TRANSPORTATION BUS STOP	38.	PUBLIC TRANSPORTATION BUS STOP
11.	ADMINISTRATION AND STUDENT SERVICES BLDG	39.	ADMINISTRATION AND STUDENT SERVICES BLDG
12.	UNIVERSITY VILLAGE BUILDING 1	40.	UNIVERSITY VILLAGE BUILDING 1
13.	UNIVERSITY VILLAGE BUILDING 2	41.	UNIVERSITY VILLAGE BUILDING 2
14.	UNIVERSITY VILLAGE BUILDING 3	42.	UNIVERSITY VILLAGE BUILDING 3
15.	UNIVERSITY VILLAGE CAFE	43.	UNIVERSITY VILLAGE CAFE
16.	ACADEMIC RESIDENCE B1 & B2	44.	ACADEMIC RESIDENCE B1 & B2
17.	COURTYARD	45.	COURTYARD
18.	SOCCER FIELD	46.	SOCCER FIELD
19.	SOCCER FIELD	47.	SOCCER FIELD
20.	SOCCER FIELD	48.	SOCCER FIELD
21.	SOCCER FIELD	49.	SOCCER FIELD
22.	SOCCER FIELD	50.	SOCCER FIELD
23.	SOCCER FIELD	51.	SOCCER FIELD
24.	SOCCER FIELD	52.	SOCCER FIELD
25.	SOCCER FIELD	53.	SOCCER FIELD
26.	SOCCER FIELD	54.	SOCCER FIELD

PARKING LOT DIRECTORY

LOT NO.	NAME
P-1	STADIUM
P-2	ALUMNI STADIUM
P-3	LOOP ROAD
P-4	EVERS & JENKINS
P-5	MAINTENANCE
P-6	AGRICULTURE
P-7	CONWELL HALL
P-8	GROSSLEY HALL
P-9	UNIVERSITY BLVD.
P-10	LAWS / TURMAN
P-11	HEALTH SERVICES
P-12	WYNDER TOWERS
P-13	SCIENCE CENTER
P-14	PRICE BLDG.
P-15	ETV BLDG.
P-16	EDUCATION AND HUMANITIES BUILDING
P-17	BANK OF AMERICA BUILDING
P-18	ADMINISTRATION & STUDENT SERVICES
P-19	ADMINISTRATION & STUDENT SERVICES
P-20	EARLY CHILDHOOD LABORATORY SCHOOL
P-21	EAST SIDE EDUCATION AND HUMANITIES
P-22	LAWS NORTH SIDE FIRE
P-23	SPONSORED PROGRAMS
P-24	CONRAD LOADING ZONE & FIRE LANE
P-25	UNIVERSITY VILLAGE EAST
P-26	UNIVERSITY VILLAGE WEST



SYSTEMS APPROACH



"Life Safety Through Fire Suppression, Prevention and Protection"

PROJECT SPECIFICATIONS FOR FIRE ALARM SYSTEM REPLACEMENT EDUCATION AND HUMANITIES CENTER DELAWARE STATE UNIVERSITY

October 10, 2011

Delaware Engineering and Design Corp
Newark, Delaware
and
Systems Approach Ltd.
Newark, Delaware



3 MILL PARK COURT • NEWARK, DE. 19713 • (302) 454-1000 • FAX (302) 454-4750

E-MAIL: rogerb@systemsapproachltd.com

GRAPHICS

FIRE PROTECTION

CONSULTING

Contact Delaware Engineering & Design Corporation for Bid Documents 302-738-7172

FIRE DETECTION AND ALARM SPECIFICATION

Part I – General

1.0 General Description

- A. Delaware State University is requesting bids for a replacement fire alarm and detection system for the Educational and Humanities Center in Dover Delaware. The system shall be a point addressable fire alarm and detection system using a combination of standard audio horns, voice evacuation speakers and visual alarms.

The building is a mixed occupancy with the following brief description:

- Assembly Occupancy – large seating capacity auditorium with stage. Voice evac section.
- Business Occupancy – office and class rooms for college level classes. Standard horn audio devices.
- Child Day Care – for children under six years of age. Chime audio devices.

The building is protected by an existing Simplex 4100 FACP. This system must remain operational until the new system has been accepted.

- B. The replacement system shall include several features as follows:

- 1) A selected area smoke and heat detection system along with sprinkler water flow and tamper provided on each floor as shown on bidding documents.
- 2) Audio and visual alarm notification devices as shown on bidding documents.
- 3) Elevator lobby smoke detection.
- 4) Elevator sprinkler heat detection and shunt trip control.
- 5) Day Care kitchen hood extinguishing monitoring.
- 6) HVAC duct detection and shut down.
- 7) Shunt trip interface with auditorium audio system.
- 8) Maintain the existing fire alarm in operable condition.
- 9) Complete demolition of existing fire alarm system.

The main fire alarm control panel will be located in the Electrical Equipment Room next to the auditorium as shown on the attached drawings. The system and all its component parts shall be UL listed and installed in accordance with all code requirements as listed in these specifications. The system shall consist of an addressable fire alarm system using a partial voice evacuation system, standard horn and strobe notification devices as shown on the bidding documents.

Note: The existing elevator does not have elevator recall or shunt trip equipment. All fire alarm features as listed above and shown on drawings shall be installed but not connected to elevator equipment. This has been approved by the Dover Fire Marshal's Office. At some future date, the elevator equipment will be upgraded and at that time, the elevator equipment will be tied to the fire alarm recall and shunt trip.

- C. The existing structure is a partial Type I and Type IIB construction with varying levels of exposed structure steel and concrete reinforced floor slabs, reinforced concrete walls and columns. Much of the building has a non-rated suspended ceiling in metal grid.
- D. The new fire alarm system shall be completely installed, tested and accepted by the local code official and the University while maintaining the current fire alarm system in place and operational. Upon acceptance of the new fire alarm system, the successful contractor shall demolish the existing fire alarm system in its entirety with the exception of the existing fire alarm control panel which will be removed by the University personnel. The contractor shall remove all field wiring, conduit and power from the existing FACP.

Conversion - As noted, the existing system shall remain fully operational until the new system has been accepted by the Fire Marshal with the exception of several components which will require conversion to the new system prior to FMO approval. They are as follows:

- All HVAC smoke duct detectors
- Water flow alarms and tampers

- Kitchen extinguishing system
- Existing manual pull stations where drawings designate to reuse existing location.
- Electromagnetic hold open devices being reused.

1.1 General Requirements

- A. All exceptions taken to these specifications, all variances from these specifications and all substitutions of operating capabilities or equipment called for in these specifications shall be listed in writing at the time of bid submission. Any such exceptions, variances or substitutions that were not listed at the time of bid and are identified in the submittals, installed equipment, associated work or at the time of acceptance testing, shall be grounds for immediate disapproval without comment.
- B. Bidders (referred to herein as the "Bidder" or "Contractor") are being solicited for the bids based upon their reputation, demonstrated skills in previous installations and the acceptable quality of equipment that each bidder can provide to Delaware State University (referred to herein as the "Owner"). The fire detection and alarm system being bid shall be a design-build and installed in accordance with these specifications and requirements.

1.2 Definitions

- A. ASME: American Society of Mechanical Engineers
- B. FACP: Fire alarm control panel.
- C. FM: FM Global (Factory Mutual)
- D. NFPA: National Fire Protection Association. Definitions in NFPA 72 apply to fire alarm terms used in this Section.
- E. NICET: National Institute for Certification in Engineering Technologies.
- F. UL: Underwriters Laboratories

1.3 Scope

- A. The work covered by these Specifications shall include all labor, equipment, materials, code official approvals, insurance approvals and services to design, furnish, install, test and document a complete fire alarm system protecting the facility in accordance with all required codes and these specifications. Minimum specified items required in the system and buildings are listed under Part 4 of these specifications and attached drawings. Scope also includes maintaining the existing fire alarm system during installation of the new system and removal/demolition of the existing system upon acceptance of the new fire alarm system. Demolition shall include removal of all existing devices, panels, back boxes, wiring, conduit and other components installed as part of the existing system with the exception of the existing fire alarm control panel which will be removed by the University. All surfaces during demolition shall be repaired, patched and prepared for painting. **Painting is not included in the scope of work. Repair shall also include replacement of any ceiling tiles damaged as part of the new install or demolition of the existing system.**
- B. The replacement fire alarm system shall be complete in all respects for operation and interface with existing building equipment related to or desired to be controlled by the fire alarm system. All work shall be coordinated with other contract work being conducted in the building relating to fire alarm and interface systems. The successful contractor shall include in their base bid price all work necessary to interface HVAC shut-down and other specified supervisory functions. Any equipment, wiring, installation or other work necessary to finish all interface and output wiring or equipment shall be included in this contract under the base bid.
- C. The attached drawings as listed in these specifications are for bidding purposes only.

1.4 Work Included

- A. All labor, materials, equipment, components, and tools required to provide the fire alarm, detection systems, releasing systems and wiring as specified

herein for the design, installation and testing of the fire alarm and detection system for the entire building.

- B. Provide all basic materials applicable to this work in strict accordance with methods specified herein and with manufacturer's recommendations.
- C. Fire alarm and detection systems described shall be complete in every respect. Provide each item of equipment in quantities shown and as required by code, design, intent and as necessary to provide a complete system in a complete operating status with final testing and documentation as specified.
- D. All corridor, shaft and other fire rated partitions and walls that are required to be penetrated shall be fire sealed to their original fire rating using a UL listed penetration seal system. **Corridor partitions and hazard areas shall be sealed to a one hour fire rating.**

1.5 Related Work

- A. Documentation, testing and acceptance testing as specified in this document.
- B. Contractor shall provide in their base bid contract for one year complete warranty, one year of complete inspection, maintenance and service in accordance with NFPA standards.

1.6 References/Required Code Compliance – (Most current editions)

- A. NFPA 72 – National Fire Alarm Code, 2007 Edition
- B. NFPA 25 – Inspection, Testing and Maintenance of Water-based Fire Protection Systems, 2008 Edition
- C. NFPA 101 – Life Safety Code, 2009 Edition
- D. International Building Code, 2009 Edition
- E. International Fire Code, 2009 Edition

- F. Underwriters' Laboratories fire alarm and fire alarm equipment listings, approvals and standards.
- G. Factory Mutual fire alarm approvals and standards.
- H. NFPA 70 - National Electric Code, 2008 Edition
- I. Americans with Disabilities Act, (except as modified per these specifications).
- J. NFPA 90A – Installation of Air Condition and Ventilating Systems, 2009 Edition.
- K. Reserved
- L. Delaware State Fire Prevention Regulations, 2009 Edition

1.7 Requirements of Regulatory Agencies

- A. All equipment, components, wiring, design and the installation of all items as described or implied in this document shall meet all of the appropriate requirements in the codes, standards and guidelines as listed under Section 1.6.
- B. All equipment, components, wiring, design and installation of all items as described or implied in this document shall be UL listed and approved for the use intended.
- C. All equipment, components, wiring, design and installation of all items as described or implied in this document shall be reviewed and approved by listed code authorities. The Contractor shall be responsible to submit all design documents and obtain all approvals from each listed code authority only after the submissions have been reviewed and approved by the Owner. No submission will be made to a code official until the Owner has approved the shop drawings.

Code Authority review required for this project is as follows:

1. City of Dover Fire Marshal's Office
2. Factory Mutual Global Company
3. Delaware State University Occupational Health and Safety
4. DEDC

D. The Contractor shall be responsible for all submission costs and the Contractor shall be responsible for obtaining all required approvals, permits, and acceptance inspections/approvals from all legal and/or required agencies, inspection organizations and insurance groups as listed in 1.7C above.

1.8 Coordination

- A. The Contractor shall fully coordinate the design, equipment, devices, installation, wiring and connection of all fire alarm systems with the Owner and/or their authorized representative and all other related contractors throughout each developmental stage of the project.
- B. Fully coordinate the installation of all systems with other contractors and other work in progress or proposed progress at the time of Contractors design and installation. It shall be the Contractor's responsibility to communicate with the Owner's on-site representatives and identify all other work or trades which will require coordination with the fire alarm system design and installation.

1.9 Submittals

1.9.1 Submittals at Time of Shop Drawings and Shop Drawing Format

- A. All shop drawings shall be approved by Systems Approach Ltd. or Owner Representative prior to installation. Submit two copies of all shop drawings prior to equipment delivery and installation of wiring. Each shop drawing must be approved by Systems Approach Ltd. or Owner Representative prior to equipment delivery and installation.

- B. The bid drawings as provided are supplied in 1/8 inch scale. The contractor shall be responsible to submit all approval drawings, shop drawings, and as-built drawings in a scale no smaller than 1/8 inch scale.
- C. All shop drawings shall show proposed wiring diagrams point-to-point with labeled terminal and splice points, data sheets, equipment ratings, layout, dimensions, conduit, wire mold, material type and finishes.
- D. Submit material list indicating proposed manufacturer's name and design/installation data for all systems and materials listed, specified or intended for use by the Contractor.
- E. The Contractor shall be required to submit the following series of drawings:
 - 1. Shop drawings
 - 2. Panel drawings
 - 3. Schematics of all auxiliary devices and auxiliary system connections such as HVAC, etc.
- F. Contractor shall be responsible to provide all shop, panel, schematic and as-built drawings in a CAD format. Drawings shall be multiple-colored ink on high quality, white bond plotting paper of a standard size sheet as agreed upon with the Owner and shall include the following parameters:
 - 1. CAD (Computer aided drafting) form using an acceptable CAD system capable of producing the electronic media in an AutoCAD 2006 or greater version format.
- G. The Owner shall own all electronic media and original drawings addressed under this specification. The Owner shall have the right to modify, reproduce, distribute and use the electronic media and original drawings in any fashion or for any use that the Owner may desire.
- H. The Contractor and manufacturer shall retain a copy of all as-built drawings and documentation as discussed in these specifications. The Contractor and manufacturer shall not have the right to use any digital media, drawings, documentation or other material describing or relating to the Spencer

- Laboratory fire alarm system without the express written permission of the Owner.
- I. All drawings shall show building background features in “green” ink with single narrow pen width. Panel drawings shall show panel box and chassis in green.
 - J. All drawings shall show fire alarm and detection features in “black” ink with varying pen widths. Separate pen widths shall demarcate devices, point-to-point wiring, device labels, and notes.
 - K. All drawings shall show underfloor fire alarm and detection features in “red” ink with varying pen widths. Separate pen widths shall demarcate devices, point-to-point wiring, devices labels, and notes.
 - L. All drawings shall show labels, wire sizes and other similar information in “blue” ink.
 - M. Contractor shall show exposed conduit in “orange” with a heavy pen width. Contractor may use other colors to demarcate other features of information on the drawings, but such colors shall be consistent from drawing to drawing and legible.
 - N. Match wiring details, including number of wires per initiating and signal circuit, and location and type of end-of-line device to type of supervision specified.
 - O. Show locations of fire alarm control panels, NAC panels, surge suppression enclosures and documentation cabinets on drawings to ensure adequate space is available.
 - P. Ensure drawings and specifications agree with respect to type of cable specified and that cable specified is suitable for the environment of the specific project.
 - Q. Contractor shall produce and provide electrical schematic diagrams of any electrical connections between the fire alarm system and building

- equipment. These drawings shall be submitted at the time of shop drawings and as-built drawing submission.
- R. As part of this project and included within the base bid cost, the Contractor shall provide the Owner with “as-built” drawings for the entire fire alarm system showing all features as described in these specifications in their entirety, in an “as-built” status. All changes and/or corrections to the approved shop drawings made during installation and testing shall be documented and shown on the final as-built documents.
- S. Along with the as-built drawing submission, the Contractor shall supply three complete sets of AutoCAD files of all drawings including the panel drawings.
- T. The Contractor shall provide one complete set of documentation for onsite use. The Owner will return one of the three sets of documentation that are required by Part 5, back to the Contractor for installation into the documentation cabinet.

Note: It is the intent of this section to ensure that a complete and adequate set of documentation exists on site and is available to service technicians, inspectors, and fire department. No documents or other items will be permitted to be stored inside of any fire alarm control equipment or other enclosure.

- U. All shop drawing submissions shall include the following:
1. A narrative description of the fire alarm system. The narrative description shall include an exact English description of all signaling arrangements, detection arrangements, output and supervisory functions.
 2. All panel drawings shall show power and battery calculations for the system. Panel drawings shall show all wiring, ribbon and other cable point connections. Show any field or manufacturer modifications to include dip switch set-up positions, jumpers and snipped components including wire color coding and labeling.

3. The system drawings shall have a plan view of each floor and a detailed riser diagram.
4. Actual wire, wire mold and conduit runs with anticipated methods of matching backgrounds or concealment of wire and conduit. Conduit and wire mold placement must be approved by the Owner.
5. System annunciation descriptors for each alarm, trouble and supervisory output signal. Such descriptors shall be in "plain English" for each alarm, trouble and supervisory output signal. The English annunciation descriptors shall use actual terminology used at the Spencer Laboratory to include floor names and point of compass designations un-coded. Contractor shall confirm descriptors with the Owner's on-site representative prior to shop drawing submission.

Note: Code numbers, zone numbers or abbreviated text will not be approved without exception. Submission of coded, zoned or abbreviated text will be rejected at the time of shop drawing submission without cause or comment. If bidder does not understand this requirement, seek clarification from the Owner prior to bid submission. Only complete and understandable English descriptors for fire alarm point and trouble annunciation will be approved.

6. Contractor shall show all exposed conduit (if any) at the time of shop drawings and received approval of the Owner. **All exposed conduit must be clearly annunciated on shop drawings by use of heavy weight pen markings and color.**

V. Submit one (1) actual sample of each type of device intended for installation. If devices differ from area to area, then two (2) actual samples of each type of device labeled for the specific area must be submitted. These items include but are not limited to the following:

1. Manual Pull Stations
2. Audio Devices
3. Visual Devices

4. Smoke Detectors
5. Heat Detectors
6. Duct Detectors and remote test switch
7. Conduit and Pipe
8. Wiring
9. Junction and Back Boxes
10. Din Rail Compression Terminal Blocks
11. Weather Proof Enclosures
12. Water Tight Junction Boxes
13. Mounting Plates
14. Addressable Modules (if not in Monitor control panel).
15. Detail drawing and sample of each wiring connection to all devices and any proposed splice connections.
16. Wire mold and back box (if applicable)

W. Shop drawings shall include original design notes for basis of design.

1.9.2 Submittals at the Time of Acceptance Testing

A. Prior to acceptance test submit manufacturer's descriptive literature of actual equipment installed and the following:

1. Equipment installation manual.
2. Equipment and device operating instructions manual.
3. Equipment maintenance and programming manuals.
4. Equipment/system service and repair data manual.
5. Parts lists.
6. Spare equipment and parts equipment and inventory list.
7. Testing and maintenance schedule as per requirements of these specifications.

B. For testing and documentation submittal requirements, see Testing and Documentation, Part 5 in these specifications.

1.10 Warranty

- A. The successful Bidder shall be responsible for all warranty and guarantee issues regardless of subcontractors, vendors or others operating as subcontractors under the successful Bidders contract. Bid submission documents shall include a document executed by the successful Bidder's senior corporate or company officer indicating that the successful Bidder understands that he/she is solely responsible legally and financially to the Owner for compliance to warranty and guarantee issues as follows:
1. All system equipment shall be guaranteed for a period of one year from date of final acceptance of each system in accordance with Part 5 of these specifications.
 2. All raceways and wiring are guaranteed to be free from inherent mechanical or electrical defects for one year from the date of final acceptance of the systems in accordance with Part 5 of these specifications.
 3. Regardless of typical manufacturer or Contractor canned warranties and guarantees, the base bid price shall include all fees for warranty or guarantee cost to include parts, labor, shipping, stocking, overhead, markup or other costs associated with performing work under the warranty or guarantee agreement. It is the intent of this section that the entire system will be warranted and guaranteed from any fault (other than an act of God or acts by other than the alarm system Contractor). If anything goes wrong with the system, the Contractor shall repair/correct at no cost to the Owner with components, parts and workmanship that are **NEW**, not rebuilt or reconditioned parts or equipment. If this intent is not clear or understood by the Bidder, the Bidder shall seek clarification from Owner prior to bid submission.
- B. As part of the successful bidder's warranty package, the successful bidder shall submit at the time of system acceptance under Part 5 of the specifications, a schedule of maintenance, testing, and service as prescribed by these specifications and referenced standards, for the first year warranty period (see NFPA 72 for additional requirements). The cost for the first year maintenance and testing shall be included in the base bid price.

- C. All warranty service that impairs the function of the fire alarm system shall be provided within **four hours** of notification to the Contractor. Costs for this service shall be included within the base bid price.
- D. All warranty service that does not impair the function of the fire alarm system but is obligated under the warranty shall be performed **within 24 hours** of notification to the Contractor unless otherwise approved by the Owner.
- E. Warranty starting period shall be based upon the determination of substantial completion as defined by the American Institute of Architects General and Federal Supplementary Conditions of The Contract for Construction, AIA Document A201-1976 and A201/SC-1977. For purposes of this work, Owner shall be known as the “architect” regarding implementation of substantial completion.

1.11 Qualifications

- A. Contractor shall (or contractually be supported by a company) specialize in fire alarm systems and have a minimum of five years of documented experience with the design and installation of the actual system and devices being installed.
- B. Contractor shall have (or contractually be supported by a company) on staff and assigned to the project a NICET Level IV certified person for fire alarm systems. Such person shall have a minimum of ten years of documented experience in the design and installation of NFPA compliant local fire alarm systems.
- C. The Contractor shall assign the NICET Level IV certified person to supervise the preparation of all technical documentation, drawings, installation, testing and acceptance testing as required by these specifications. The NICET Level IV certified person shall be present at shop drawing review meetings, design issue meetings and all acceptance testing.

- D. Equipment manufacturer shall be a company specializing in NFPA 72 fire alarm and detection systems with a minimum of ten years of documented experience.
- E. All qualification documentation shall be submitted at the time of bidding and verified at bid acceptance.
- F. Contractor shall assign to the project a project manager who is experienced in the installation of fire alarm systems. The Project Manager shall be assigned to the project as his primary responsibility. He shall be dedicated to the design, installation and successful completion of a complete and working system. The Project Manager shall demonstrate qualification through experience and/or education to the satisfaction of the Owner. The Project Manager shall supervise the preparation of all technical documentation, drawings, installation, testing and acceptance testing as required by these specifications. The Project Manager shall have a position within his/her company that allows him/her to make decisions and commit his/her company legally and financially so as to minimize corporate bureaucracy during the resolution of issues and problems.
- G. All qualification documentation shall be submitted at the time of bidding and verified at bid acceptance.

Part 2 – Products

2.1 Manufacturers

- A. Simplex
- B. Siemens
- C.Notifier
- D. Silent Knight
- E. Gamewell

- 2.1.1 Substitute equipment proposed as “equal to” equipment as specified in sections 2.1 and 2.2 shall meet or exceed the requirements of these specifications.

The submitter of substitute equipment shall provide proof that such substitute equipment equals or exceeds the features, functions, performance, and quality of the specified equipment. **This proof shall be provided by an analysis of the substitute equipment against each system and component specified in 2.1 and 2.2.** The analysis shall use a copy of each listed manufactures (Simplex, Siemens, Notifier) equipment and specification manuals. The analysis shall compare the substitute equipment with the specified manufactures equipment by marking each paragraph as compliant or noncompliant as compared to the requested substitute equipment.

Along with the analysis, the submitter shall provide a letter from the substitute manufacture that certifies the information presented as either compliant or non-compliant, including a detailed explanation of each paragraph identified as non-compliant. The letter shall be signed and sealed by the substitute manufactures registered electrical engineer, substitute manufactures registered fire protection engineer or substitute manufactures NICET IV certified technician (in fire alarm).

In order to ensure that the Owner is provided with a system that incorporates required survivability features, this letter shall also specifically certify that the system is capable of complying with the test requirements of this specification and quality testing as specified by the three listed products in section 2.1 and 2.2. Fees for evaluating substitute equipment shall be based upon a time and materials basis using a published hourly rate from Systems Approach Ltd payable by the submitting vendor/contractor.

2.2 Fire Alarm and Detection Control Panels and Associated Equipment.

A. Networked Control panels shall be:

- 1) Simplex 4100U
- 2) Siemens XLS
- 3) Notifier NFS2-640
- 4) Silent Knight FPI-2000
5. Gamewell FCI E3

B. Control panel(s) shall be point addressable and networkable using copper or fiber optic cable. Panels shall be surface wall-mounted enclosures unless

- otherwise approved by the Owner. All fire alarm panel and system design shall have alarm verification feature and environmental compensation for all smoke detection.
- C. Power Supply: Adequate to serve control panel modules, detectors, remote annunciator, door holders, smoke dampers (relays), initiating devices, amplifiers, and all alarm signaling devices.
 - D. Initiating Circuits: Supervised, twisted/shielded circuits sufficient for remote addressable zone monitoring and capable of alarm and trouble indication at primary control panel. Each initiating circuit shall have a supervised addressable point which can be switched or have a programmed disconnect feature independent of all other initiating zones or points.
 - E. Indicating Circuits: Supervised, twisted/shielded circuits sufficient for horn and strobe signal devices connected to system.
 - F. Auxiliary Relays: Provide sufficient SPDT auxiliary relay contacts (for each detection zone) to provide accessory functions specified.
 - G. Provide separate programmed switches to disengage door hold-open devices.
 - H. Provide TROUBLE ACKNOWLEDGE, DRILL and ALARM SILENCE switch.
 - I. Control panel shall have historical record recordation ability inherent in panel memory for Alarm, Trouble and Supervisory signals. Historical record shall store a minimum of 600 events per signal type and be configured to record all events including but not limited to alarms, acknowledgments, power loss and related testing features.
 - J. Surge Protector (AC transient suppresser, AC power).
 - J.1 Suitable for protection of electronic equipment and electrical systems of 600 volts and less. Device shall be capable of protection of all AC electrical circuits and equipment from the effects of lightning induced voltages, external switching transients, and internally generated

switching transients resulting from inductive and/or capacitive load switching.

J.2 Surge protector and installation shall be in accordance with:

1. NFPA 70.
2. UL #1449 Standard for Fire and Safety-TVSS/SPD
3. IEEE Std. 142-Recommended Practice for Grounding Std. 518-Recommended Guide on Electrical Noise ANSI/IEEE C62.41-1991 Edition. Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits.
4. Federal Information processing Standards Publication 94 (FIPS PUB 94)

J.3 Acceptable Manufacturers:

1. Transtector Systems, inc.
10701 Airport Drive
Hayden Lake, ID 83835
Tel: 1-800-882-9110
FAX: 208-762-6133

Or Equals: None

J.4 Surge Protection Panel enclosure shall be a minimum of a (NEMA 3R) construction, factory primed and field painted to match mounting surface.

J.5 The SPD system as required shall consist of a Service Protection Panel for each service rated 600 volts or less, and/or Branch Panel Protectors. All devices shall operate as a total coordinated and engineered system, as well as be engineered as a system by the manufacturer.

J.6 Maximum continuous operating voltages of any system component shall not be less than 115% of the nominal system operating voltage.

- J.7 All SPD components shall be rated with an operating temperature range of 30 to 120 degrees Fahrenheit, and from 0 to 85% humidity noncondensing.
- J.8 Nominal system frequency is 60 Hertz, operating frequency range of the SPD system shall be 0 to 400 Hertz.
- J.9 All SPDs shall be connected in parallel with the power system they are protecting. Series connected components shall not be used. Suppression paths shall not be grounded.
- J.10 All SPDs shall be UL 1449 listed and bear the UL label.
- K. Remote Annunciator: Provide supervised LCD remote annunciator including audible and visual indication of fire alarm by zone, and audible and visual indication of system trouble. Install in flush wall-mounted enclosure as specified. Remote annunciator shall provide the same English descriptor as all other required annunciation from printers, CRTs and fire alarm panel annunciator. Provide remote annunciator at all locations shown on drawings. Annunciation shall be remote LCD annunciator which shall indicate alarm, trouble and supervisory conditions by individual English descriptors. The remote LCD annunciator shall also be provided with a keyed switch or access code to perform system acknowledgment and system reset. Coordinate specific location with Owner.
- Remote annunciator shall coincide with a voice evacuation control panel and microphone.
- L. Digital Alarm Communicator Transmitter (DACT): Shall be stand-alone in a separate enclosure. DACT shall not be permitted to be an integral part of any FACP or releasing panel. Under no circumstances will standard telephone lines be permitted inside of an FACP or releasing panel. The DACT shall be installed in a separate enclosure adjacent to the main fire alarm control panel. The enclosure shall be labeled "Digital Alarm Communicator" and marked with its unique identifier number. The enclosure shall be of sufficient size to contain all components parts of the Digital Alarm Communicators system to include the communicator, secondary power supply,

phone jacks and like equipment. All wire connections between Digital Alarm Communicator system and the fire alarm control panel shall be in conduit.

M. Voice Evacuation Module:

- M1. Shall be based upon a 70 VRMS system.
- M2. Install audio speakers wattage tapped as specified on drawings.
- M3. Appliers shall be sized with 30% spare capacity above wattages as listed on drawings.
- M4. Remote control and microphone must be in a lockable, flushed mounted cabinet.
- M5. All 70 VRMS system wiring shall be in EMT.

2.3 Initiating Devices - General Requirements

- A. Manual Pull Station: Double action, addressable. Flush and/or surface mounted as indicated by the specific building construction or drawings and as identified in Part 4 of these specifications. All manual pull stations must be keyed alike to the fire alarm control panel. Allen wrench opening devices not permitted.
- B. Heat Detector in conditioned spaces: Shall be addressable combination rate-of-rise and fixed temperature, rated 135 degrees F for conditioned spaces. Contractor shall survey areas where heat detector is to be installed for possible need of higher fixed temperature rating.
- C. Heat Detector in unconditioned spaces: Shall be Thermotech model 302ET or EPM anticipation type self-restoring rated at 194 degrees F or match existing. All heat detectors in unconditioned spaces shall be individually addressable through monitor zone actuated modules. Contractor shall survey areas where heat detector is to be installed for possible need of higher fixed temperature rating.
- D. Smoke Detectors: Style and design shall be photoelectronic with base having visual indication of detector actuation, bug screen and suitable for mounting on 4 inch outlet box and/or low profile wire mold back box. Detector and/or fire alarm panel shall have environmental compensation and

provide automatic signal for dirty detector in advance of and prior to reaching alarm threshold.

- E. Duct Mounted Smoke Detectors: Style and type shall be photoelectronic type with auxiliary SPDT relay contact, key-operated NORMAL-RESET-TEST switch, duct sampling tubes extending width of duct, visual indication of detector actuation and duct-mounted housing. Duct detectors must be provided with remote annunciation lamp at key switch mounted five feet above finished floor.

Remote annunciation lamp must be located in normal occupied area at the approval of the Owner's representative. Duct Mounted Smoke Detectors must be securely mounted "without possibility of vibration" and located for accessibility and ease of maintenance/testing. Duct detector shall be provided with a remote test switch. Key-operated switch may be on flush cover with lamp to indicate detector actuation. (Provide one switch for each duct mounted smoke detector). All flex connections from and to duct detector and fan/damper control equipment shall be installed in Sealtight.

2.4 Signaling Devices

- A. All audio and visual signaling devices shall be Cooper/Wheelock.
- B. Strobe Lights - where noted on drawings: Cooper/Wheelock based upon contractor submittal approvals. Style and type shall be visible notification appliances with 1Hz strobes. Contractor shall provide both wall mount and ceiling mounted visible appliance assembly with white housing and clear lens in accordance with NFPA 72, meeting the requirements of ADA. Where strobe lights are shown on the drawing to be mounted on walls, the strobe light shall be mounted at a minimum of 80" and a maximum of 90" above the finished floor. Ceiling mounted where suspended ceiling are provided.
- C. Horn: Cooper/Wheelock based upon contractor recommendations and submittals. Device must be approved by the Owner. Color shall be white. Must provide both ceiling and wall mounted versions. Ceiling mounted where suspended ceiling are provided.

- D. Combination Horn & ADA Strobe: Cooper/Wheelock based upon contractors recommendations and submittals. Ceiling mounted where suspended ceiling are provided. Color shall be white. Device must be approved by the Owner. Must provide both ceiling and wall mounted versions.
- E. Voice Evac Speakers - Cooper/Wheelock based upon contractors recommendations and submittals. Color shall be white with the exception of trumpet horn speakers used in the upper portion of the auditorium. All speakers and voice alarm shall be 70 VPMS. Ceiling mounted where suspended ceiling are provided.
- E.1 Supervised horn loudspeakers (trumpet horns) shall be 15 watt with an installation tap as shown on drawings.
- E.2 All wall and ceiling speakers shall be 4 watt with an installation tap as shown on drawings.
- F. Chimes - Cooper/Wheelock based upon contractors recommendations and submittals. Ceiling mounted. Color shall be white.
- G. Based upon consultation with the University Liaison Representative and the design team, the fire alarm system shall also include an exterior alarm light and horn. The alarm light shall be a 360° revolving red light or red strobe, weather tight seal and approved for use in exterior locations. Each exterior light shall be combined with an exterior audio horn in a weather tight enclosure approved for exterior use. The alarm light can be powered by ordinary building AC power and need not be provided with a secondary power supply. Location of the exterior light and horn shall be as shown on the drawings and shall be coordinated with the Owner for elevation and placement. The purpose of this light and horn is to provide arriving fire department equipment with a visual and audible location of the specific building in alarm.

2.5 Auxiliary Devices

- A. Door Release: Existing

2.6 Fire Alarm Wire and Cable

- A. Fire Alarm Power Branch Circuits: Shall be wired in accordance with NFPA 72 Local Fire Alarm Regulations and NFPA 70, Section 760. Each power source shall be obtained from an emergency power circuit and the breaker shall be marked "FIRE ALARM POWER SOURCE" and be provided with a "red" locking device so as to prevent accidental power loss. Contractor shall be responsible to run all power from the closest emergency circuit panel to the fire alarm system.
- B. Initiating, Signal and Communication Buss Circuits: Shall be Aerospace Wire & Cable Inc., Aerospace
- #7140 18/2 TW/SH 200 deg.C. FPLP (New York City Certified)
 - #7130 16/2 TW/SH 200 deg.C. FPLP (New York City Certified)
 - #7120 14/2 TW/SH 200 deg.C. FPLP (New York City Certified)
 - #7110 12/2 TW/SH 200 deg.C. FPLP (New York City Certified)

Any and all fire alarm cable used in this system shall be "solid copper" conductors. No exceptions.

Important Note: 12 inch wire samples for 18 T/S, 16 T/S, 14 T/S and 12 T/S shall be submitted at the time of shop drawing submittals and prior to material purchase and installation. Wire samples shall be approved by Owner and Systems Approach Ltd. prior to purchase.

"Or equal" for wiring: **NONE (don't bother to ask).**

Requirement: Contractor to use Cyclops Data Cable Stripper Ideal #45-514 Wire Stripper to strip the Aerospace wire to make project easier and minimize wire damage.

Use 14 AWG (minimum size) twisted/shielded solid conductors for fire alarm indicating circuit conductors. All communication bus cable shall be 18 AWG twisted/shielded solid copper wiring using fire alarm listed plenum cable in all exposed areas. Any area subject to moisture or the effects of

weather shall use water resistant conduit, enclosures, fittings, adapters, and like equipment. This includes all exterior mounted devices. Weather tight and water resistant installation shall extend for 12 inches within building envelope.

Part 3 – Execution

3.1 Installation

- A. Install system in accordance with Manufacturer's instructions, code requirements and these specifications.
- B. All devices, boxes and conduit shall be installed plumb and level.
- C. Install manual pull stations with operating handle at 48 inches above finished floor. Install audible and visual devices as noted on drawings. All wall mounted visual devices shall be mounted no less than 80 inches above finished floors.
- D. All devices shall be securely mounted with approved back box. All back boxes shall be recessed in walls or of an approved surface mount, wire mold type. Standard back boxes and extension rings with knockouts are not permitted when location requires surface mounted box. Contractor must use a finished back box suitable for painting. Only approved and appropriate type of conduit connectors shall be used for connection to back boxes.
- E. All wiring for initiating, signaling and auxiliary devices shall be installed in "red" Allied Tube Fire Alarm EMT or equal conduit, or wire molding except those areas where the wire can be fished in walls or hung above suspended ceilings. When wire is installed above ceilings and not in conduit, it must be run above the bottom of any red steel (or other type of super structure) and supported every 4-1/2 feet by a bridle ring or other approved support device. Wiring shall not be laid directly on a ceiling or supported by pipes, duct work or other building equipment. All wiring shall be secured within 12 inches of all junction boxes, back boxes, other devices or splice connections. All conduits shall be secured to building structure every 4 feet.

No wire mold shall be used in public visible areas unless specifically approved by the Owner. This issue shall be reviewed at the time of shop drawings.

When wire mold or EMT transition above a ceiling to permit unprotected cable runs, the EMT or wire mold shall be provided with a protective cap to ensure that the EMT/wire mold does not damage the wire.

- F. All fire alarm cabling and/or devices which are installed within 10 feet of water or sprinkler equipment shall be installed in Sealtight conduit with liquid tight connections and liquid tight (waterproof) boxes. When there are three or more monitoring/alarm points within the same area, monitor relays shall be mounted with a NEMA 3R Hoffman.
- G. Mount end-of-line (EOL) devices in a back box. All end-of-line resistors shall be landed on terminal strips mounted into device back boxes or appropriate electrical enclosures or in a separate junction box adjacent to the last device in circuit. Each EOL device back box shall be labeled "EOL" and be visible from front of device. If "EOL" is mounted in separate junction box, the face of the box shall be labeled. All end-of-line device leads shall be insulated from short conditions by use of approved heat shrink wire insulation.
- H. All wiring connections to sprinkler system waterflow switches, sprinkler and/or fire pump system valve tamper switches, fire extinguishing systems, duct detectors and building interface equipment shall use conduit to within ten feet of device wherein the conduit shall terminate at a junction box. From the junction box to the device, the fire alarm wire shall be run in an approved Sealtight conduit and secured at each connection point to withstand a 50 pound pull force.
- I. Automatic Detector Installation: Devices shall be installed as per the manufacturer requirements, NFPA 72 and these specifications. All detectors shall be securely mounted with approved back box. All back boxes shall be recessed. Only approved and appropriate type of conduit connectors or strain relief connectors shall be used for connection to back box.

- J. Any wire entry or exit from a device, conduit, Sealtight or Greenfield shall be through an appropriate and approved box which is designed and installed to prevent chafing, cutting or other damage to the cable. All connections to devices, boxes, back boxes and like devices including any wiring exiting properly terminated conduit or EMT shall be provided with strain relief sufficient to secure cable at the point of entry or exit. **Strain relief from back boxes, devices junction and panel boxes for wire cable shall consist of Arlington Ind., Inc LPCG50 connectors for single cable entry and Arlington NM 840 series for multiple cable entry.**
- K. Any conduit that is installed within areas subject to moisture, rain or water drainage shall be installed using approved water resistant and watertight conduit, enclosures and like equipment.
- L. All system devices, panels and junction boxes shall have a unique identifier number which shall be:
1. Labeled on each device, panel and junction box with a durable label capable of surviving environmental conditions.
 2. Labeled on all drawings.
 3. Labeled on all parts lists and required testing documentation.
 4. The unique identifier numbering system shall be approved by the Owner at the time of shop drawing submittals.
 5. Label for smoke detectors shall be installed on the base and readable from the floor at a distance of 10 feet.

Note: The intent of this requirement is to have each and every device and component (except panel components) installed with a logical and unique number whereby all inventory, documentation and life effort can be tracked by the unique number. Device labels shall be designed and installed to have a survival life of 10 years.

- M. Each conductor (individual wire) shall receive a unique and durable wire number at each terminal block, splice connection, device terminal and any other location where a conductor is landed. **Only “Brady Vermaflex” heat shrink wire markers will be permitted.** No other label/marker systems shall be approved. In areas where the atmosphere is unconditioned, the wire number shall be protected with a clear heat shrink protector sleeve.
1. System devices that are located above a suspended lay-in ceiling shall have the heat shrink wire markers installed on each cable 12 inches before entering the back box and 12 inches after exiting the back box.
 2. Cable labeling in junction panels, control panels and other covered boxes shall have the shrink wire marker installed at the end of the cable prior to the protective heat shrink stripping cap. See wiring detail on bid drawings. Each wire number shall be shown on the final as-built drawings or on a separate approved document which shall be included in the final documentation and describes the wiring to each device as follows:

Device No.	Circuit Type	In from/ Out to	Last/Next Termination	Wire No.	Type	Color

- N. The power supply surge suppression device(s) shall be installed in a separate NEMA 3R enclosure adjacent to each fire control panel and shall not be installed inside of the fire control panel. The surge suppression enclosure shall be labeled “Power Supply Surge Suppression” and marked with a unique identifier number. The surge suppression enclosure shall be of sufficient size to contain all components of the surge suppression system and including terminal strips. All wire connections between the surge suppression devices and the fire alarm control panel shall be in conduit. It is the intent of this specification to require additional and redundant surge suppression protection for all system components whenever they receive AC or DC power.
- O. When installing wire numbers at back boxes, the wire numbers shall be installed on each cable inside of the back box when the back of the back box

is **not** accessible (i.e. when the back box is installed on hard ceilings, on concrete or block surfaces or in gypsum walls). If the back of the back box is accessible, then the wire number shall be installed as listed in section M (1) above.

- P. The labeling of system devices and other equipment may be accomplished by using a P-touch type labeling system. No hand written labels or "Sharpie" markers will be permitted.
- Q. Traditional wire ties are permitted for use in the system to secure wire bundles. The contractor shall provide written instruction to each employee on the correct use of wire ties so as to avoid compression of the cable jacket, shield or conductor insulation. Wire ties may not be used to secure cables to bridle rings, building structure, back boxes, panel enclosures, conduit or as wire restraint at device and other terminations.
- R. All terminal blocks, cards, relays and other devices shall be rigidly mounted within a cabinet enclosure or back box using screws, bolt & nut or epoxy glue. Double back tape or similar mounting systems shall not be permitted.

Wire terminations, splice connections and all other connections shall be made by the use of UL listed compression terminal blocks as follows:

All panel and junction box connections:

- **"Square D" 9080 GMC Terminal Blocks, 600V, 30A with Din Rail or equal.**

All back box connections for shields and small connections:

- **"Ideal" #89-608 Barrier Strip, 600V, 20A or equal**

No wire nuts or crimp connection devices will be approved. When terminal blocks are added to devices which incorporate a pig tail, the terminal block shall be securely mounted with mechanical fasteners (no double back tape) in the back box or on the back of the fire alarm device.

- All Din Rail terminal blocks shall be provided with a number which shall be shown on all panel drawings and as-builts along with wire numbers.
- S. All conduit, devices and other system components that are installed in areas subject to moisture, water, rain or water drainage shall be installed using approved water resistant and water tight conduit, NEMA 3R enclosures and like equipment.
- T. Provide power supply wiring to fire alarm system components from building electrical panel. Circuit breaker shall be sized in accordance with fire alarm system demand and the NEC. Branch circuit breaker shall be clearly labeled for fire alarm service, contiguous to the circuit breaker toggle switch and the toggle switch shall be provided with a lock to prevent accidental movement. See Section 3.1 (M) for labeling requirements.
- U. Provide all low voltage signal wiring for systems specified herein in a workmanlike manner. Provide system raceways in accordance with manufacturer's requirements for installation of system's wiring. Provide and tag conductors at all junction and terminal points and identify by same number on all shop drawings. All conduit, cable, outlet and mounting boxes required as part of mounting arrangements shall be color-coded red if not in public area.
- V. Protect exposed wiring installed above ceiling construction from physical damage where necessary by conduit, guard strips or other approved means. Install all drops to wall devices in wire mold unless fished in walls. Properly support all low voltage cables and conduit from the building structure by the use of Bridle Rings. At those points where the wire descends below the concrete/steel structure, the wire must be provided with adequate strain relief which is designed not to cut or ground the cable shields. The wire shall descend plumb to the device or transition. Secure cable in place at intervals not exceeding 4-1/2 feet and within 12 inches from every cabinet, box or device. Cable stress relief shall be required for all connections to devices and boxes.
- W. In running plenum cable not in conduit, all bridle rings running parallel with red steel (and/or wood framing) shall be turned up on the bottom flange of

red steel (and/or wood framing) so as the wire run is on top of the bottom flange and cradled by the bottom flange. Where intersecting beams must be crossed, the wire run shall be routed as follows:

- a. When a corrugated steel flute is available above the red steel, the wire shall be routed through the flute and over top of the steel beam.
 - b. When a corrugated steel flute is not available, the wire run shall be taken under the intersecting beam and held off the beam by bridle rings on each side.
 - c. When running wire through wood flooring and truss members, the wire shall be secured so as not to be exposed to metal gusset edges or other metal objects that could cause damage to the cable from weight, strain or vibration over time.
- X. When any wire run transitions from above a suspended or hard ceiling into a room or area which has no ceiling and is below an elevation of 7 feet above the floor, the entire wire run shall be run in red EMT through the entire room or until the red EMT terminates within a junction or back box. The intent of this requirement is to not permit any exposed plenum wire in areas without ceilings.
- Y. Install all fire alarm wiring in separate raceways. Do not mix 120 volt AC power with fire alarm initiating, signaling or communications cable in the same raceway. All 120 volt AC power wiring shall be separated from initiating, signaling or communications cable inside of FACP, NAC or junction boxes with a paper or fiber board separation.
- Z. Be responsible for assuring that conduit sizes and the wire quantity, size and type are suitable for the equipment and conditions as they exist. Review the proper installation of each type of device with the equipment supplier. Make final connections between the wiring and equipment under the supervision of equipment manufacturer's certified technician and NICET person in charge.

- AA. Be responsible to seal all floor, ceiling and wall penetrations with approved materials which will provide the equivalent fire resistive rating as that of the wall, floor or ceiling that was penetrated. Contractor shall also be responsible to re-seal or repair any access ways or penetrations made through draft stops or fire stops with materials and workmanship which equals the original intended fire rating of the draft stop. All fire penetrations shall be sealed the same day of penetration.
- BB. All fire alarm wiring which is not concealed above ceilings, fished in walls, run in Greenfield or run in Sealtight, shall be installed in conduit and/or wire mold unless specified otherwise on drawings.
- CC. Elevators: Smoke detectors shall be located outside each elevator landing in accordance with NFPA 72 and programmed to recall the protected elevator. Heat detectors shall be located within two feet of each sprinkler head that is located within the elevator machine room. The FACP shall be programmed to shunt trip the elevator upon activation of the machine room heat detector.
- DD. Where required, all smoke detectors and alarm monitor or control devices which are to be installed under a raised floor shall be provided with an approved drip shield to protect the device from water that could drip from above or on top of the raised floor surface. Each device shall also be provided with LED annunciation at an approved location. The design and installation method shall be proposed by the contractor and shall be subject to the approval of the Department of Occupational Health and Safety at the time of shop drawings.
- EE. When wire is run in concealed mechanical spaces and above ceilings, good workmanship shall be used to insure that wire(s) are not physically exposed to all thread, duct edges or other sharp edges. When wiring is hung in such a way that the wire could become exposed over time, the contractor shall shield the sharpen edge with an approved method. Using reason and logic, the Owner and Engineer shall determine what is considered exposed and what is an approved method.
- FF. All wiring in the stage area shall be in EMT.

3.2 Wire Jacket Ends and Shield Drains

- A. All signal, communications and power wire (low voltage) shall be twisted/shielded as specified in Section 2.6, B. There shall be no use of unshielded cable on the project with the exception of 120 VAC power to surge suppressors and system power supplies. All cable and shields shall be installed as follows:
1. Initiating circuits: all shields shall be carried through each device back box through the use of a compression terminal block as specified in Section 3.1 (R) of these specifications. Each shield drain wire shall be insulated with “**clear**” heat shrink wire insulation installed from the cable end heat shrink strip to the terminal block. The shield shall be landed at the “panel end” as per manufactures recommendations. The “field end” of the shield shall be terminated in the last device back box at the compression terminal strip.
 2. Indicating horn, speaker (where applicable) and strobe circuits: all shields shall be carried through each device back box through the use of a compression terminal block as specified in Section 3.1 (R) of these specifications. Each shield drain wire shall be insulated with “**clear**” heat shrink wire insulation from the cable end heat shrink strip to the terminal block. Shield landing shall be as follows:
 - In NAC panels, the shield shall be landed on an acceptable ground at the junction panel (See Section 2.2 F) located adjacent to the NAC panel. The field end of the shield shall be terminated in the last device back box, in the compression terminal strip.
 - In EACP or transponder/data collection panels, the shield shall be landed as specified by the system manufacturer.
 3. Communication, signal and data circuits shall be carried through each device junction box, back box, or other enclosure necessary through the use of a compression terminal block as specified in Section 3.1(R) of these specifications. Each shield drain wire shall be insulated with “**clear**” heat shrink wire insulation from the cable end heat shrink

strip to the terminal strip. The shield shall be landed at the panel as per manufactures recommendations. The field end of the shield shall be terminated in the last device back box, in the compression terminal block.

- B. Wire stripped ends shall be protected with “red” heat shrink insulation placed at the cable jacket end to insulate the transition from the cable to the stripped drain wire.

3.3 Field Quality Control

- A. All system testing shall be in accordance with NFPA 72 and these specifications, Part 5.
- B. Contractor shall be responsible to install all system components, wiring and conduit in a workmanship like manner and to the satisfaction of the Owner. The Owner shall determine the acceptable level of workmanship. **Examples of existing installations or other contractor installations shall not be used for evaluation of acceptable workmanship under the fire alarm contract work.** Only the highest quality workmanship will be accepted. There are no exceptions to this requirement.

3.4 Fire Alarm Wire and Cable Color Code

- A. Provide fire alarm circuit conductors with color coded insulation, or use color tape at each conductor termination and in each junction box. Color code shall be specified by the Contractor at the time of shop drawings and shall be consistent throughout all fire alarm systems. Color code shall be listed on all shop and as-built documentation/drawings.

3.5 Electrical Service for Installation Operations

- A. Contractor may use any existing electrical service, outlet or system available where approved prior by the Owner. Contractor shall not assume that evidence of existing outlets implies energized circuits.

- B. When electrical service is not available, the contractor shall provide his own electrical supplies from generators or other suitable service.
- C. Contractor shall provide all necessary cords, leads, generators and other necessary equipment required to perform installation, testing and demolition work.

3.6 Ceiling Device Installations

- A. All installations of ceiling devices including smoke detectors, horns, strobes and speakers where installed in a suspended lay-in ceiling **shall be provided with a ten foot coil of wire**. The wire coil shall be secured at the floor/roof deck level just prior to the device drop using a "lost" secured wire tie" so as not to crimp wire shields. In the case of minimal space above a suspended ceiling, the coil shall be secured to a bridle ring or other approved mounting point.

3.7 Fire Alarm Control Panel Installation

- A. All field wiring within the fire alarm control panel shall be dressed and cornered. Wiring shall be run parallel with 90 degree bends for directional changes. Wire ties shall not be used to restrain wire bundles. Wire straps if applied shall not compress wiring jackets.
- B. All field wiring shall be **terminated in a junction box located above or beside the main fire alarm control panel**. The junction box shall be provided with terminal strips and segregated into four parts as follows: 1) power, 2) initiating, 3) Signaling and 4) Other. The junction box cover shall be latched and operable with a standard screwdriver or keyed device.

Note to Contractor: The system installation at the FACP location will include a minimum of five enclosures as follows:

- 1) FACP enclosure(s)
- 2) Battery enclosure(s)
- 3) Wiring junction box as described in 3.7(B)
- 4) Surge protector enclosure as described in section 4.2.1

- 5) Documentation cabinet as described in section 5.4.1

Other enclosures may be necessary such as NAC, Support cans, wire trough, etc.

3.8 Visual Strobe Synchronization

- A. All visual strobe devices that are within the same viewing area must be in synchronization. The contractor and equipment vendor shall provide a design and installation that meets the requirements of NFPA 72, Section 7.5.4.3.2.

Part 4 - Building System Descriptions

4.1 E & H Building

4.1.1 Drawing List:

FA-1	First Floor, Area A
FA-2	First Floor, Area B
FA-3	First Floor, Areas C&D
FA-4	Second Floor, Area A
FA-5	Second Floor, Area B and Mezz Mech Rm Area B.
FA-6	Second Floor, Areas C&D
FA-7	Third Floor, Areas D and Partial Roof, Areas A&B
FAC-1	Ceiling - First Floor, Area A
FAC-2	Ceiling - First Floor, Area B
FAC-3	Ceiling - First Floor, Areas C&D
FAC-4	Ceiling - Second Floor, Area A
FAC-5	Ceiling - Second Floor, Area B
FAC-6	Ceiling - Second Floor, Areas C&D
FAC-7	Ceiling - Third Floor, Areas D
FAD-1	Demolition - First Floor, Area A
FAD-2	Demolition - First Floor, Area B
FAD-3	Demolition - First Floor, Areas C&D
FAD-4	Demolition - Second Floor, Area A
FAD-5	Demolition - Second Floor, Area B

- FAD-6 Demolition - Second Floor, Areas C&D
- FAD-7 Demolition - Third Floor, Areas D

4.1.2 General System Description: This fire alarm system shall be a point annunciated addressable system as shown on the drawings. It is the intent of this system to provide a complete manual and automatic fire alarm system with selected area detection, partial voice evac, audio and visual devices. Furthermore, it is the intent of the system to monitor and control all fire suppression systems, fire extinguishing systems and building services as designated.

The system will be configured with general alarm signals, supervisory alarm signals and trouble signals.

4.1.3. Operation of System

General Building Area:

- A. Audio and visual alarms to sound throughout the entire building upon activation of any initiating alarm device (i.e. water flow, manual pull station, smoke detector, etc) under the following alarming arrangement:
 - 1) FACP and all remote annunciators shall annunciate the specific alarm condition.
 - 2) All alarms shall be annunciated to central station service through new DAC.
- B. All duct smoke detectors and valve tampers shall provide a supervisory alarm at the main fire alarm panel and all remote annunciators.
- C. All system troubles shall provide a trouble alarm at the main fire alarm panel and all remote annunciators.
- D. Annunciate specific device or zone in common plain English at the FACP and remote annunciators in plain English description. Annunciation descriptors shall be the standard terminology used by the Owner for each

area. Descriptors shall not be abbreviated. All terminology and descriptors shall be approved by Delaware State University Liaison Representative at the time of shop drawing submittals.

E. Elevator recall shall be as follows:

- Primary floor = First Floor
- Secondary floor = Second Floor

G. Activation of any supervisory or trouble alarm shall cause the following:

1. Annunciate specific device or zone in common plain English at the Fire Alarm Control Panel and Remote Annunciators in plain English description. Annunciation descriptors shall be the standard terminology used by the University, for each area. Descriptors shall not be abbreviated. All terminology and descriptors shall be approved by the University Liaison Representative at the time of shop drawing submittals.

4.1.4 Fire alarm system shall consist of the devices as shown on the bid drawings and installed in accordance with NFPA 72.

4.1.5 In addition to the devices as noted in section 4.1.4, the Bidder shall include in his base bid the following "installed as spares" devices to be used at the Owners discretion only. The purpose of these "installed as spare" devices is to assure that the base bid price is sufficient to cover most intangible device placements and other architectural changes:

a.	Manual Pull Stations -----	1
b.	Monitor points/relays -----	2
c.	Control points/relays -----	2
d.	Smoke Detectors -----	4
e.	Duct Smoke Detectors -----	2
f.	Heat Detectors -----	1
g.	Strobes Lights – 15 cd -----	2
h.	Strobes Lights – 30 cd -----	2
i.	Strobes Lights – 75 cd -----	0

j.	Strobes Lights – 110 cd -----	1
k.	Horns -----	5
l.	4 watt speakers -----	6
m.	Chimes -----	1

4.2 Fire Alarm System - Additional Requirements

4.2.1 Fire alarm system (including subpanels, transponders, DGP's or NAC's) power supplies shall be protected with separate surge protection in the power supply line feeding the fire alarm panel, releasing panel and NAC. Surge protection shall be redundant and independent of any surge protection provided in and listed for the fire alarm panel. The surge protection device shall be located within 5 feet of the fire alarm panel, sub panel, transponder or NAC, and be labeled "surge protection, fire alarm panel ##". The surge protection shall be mounted in its own NEMA 3R electrical enclosure with label on exterior of enclosure.

4.2.2 Spare Parts. Contractor shall include in the base bid the cost to provide all manufacturer's recommended spare parts and devices. At a minimum, the Contractor shall provide at the final acceptance test the following spare parts and devices:

- a. One smoke detector of each type used on the project.
- b. One heat detector of each type used on the project.
- c. One manual pull station of each type.
- d. Two of each type of fuse used in each fire alarm system.
- e. One audio device of each type used on the project.
- f. One visual device of each type used on the project.
- g. Included shall be any remaining devices not installed under the provisions of section 4.1.5.

4.2.3 All spare parts shall be listed on all inventory lists and each spare part shall be labeled for the specific system or component it is intended.

4.2.4 All secondary power supplies (batteries) shall be calculated in accordance with NFPA 72 and manufacturer's recommendations and shall include design spare capacity. Battery size shall be increased by 20% above minimum calculation.

4.3 Special Conditions

4.3.1 Contractor shall conceal all conduit and wiring above ceilings where applicable. The decision to allow exposed conduit shall be made by the Owner at the time of shop drawings. Any exposed conduit or wiring shall be clearly annunciated by the Contractor through the use of color code or other annunciation method on the shop drawings so that it can be easily identified during shop drawing review.

4.3.2 Contractor shall connect and monitor all alarm, trouble, and supervisory points for each fire suppression, fire pump and fire extinguishing system to the fire alarm system. It shall be the responsibility of the contractor to coordinate with the Owner's on-site representative to identify any and all such systems prior to development of shop drawings.

4.3.3 All manual pull stations shall be recessed and flush mounted with conductors concealed within wall or structure. This includes existing masonry surfaces. If an existing condition exists that will not permit recess and flush mounting (filled masonry), then the manual pull station may be surface mounted using a metallic wire mold back box and raceway. All raceways shall be flush against the wall or mounting surface without any space or bends. All wire mold raceway shall enter an approved wire mold back box flush against the wall or mounting surface.

4.3.4 All wire mold installed for this project shall be metallic and fastened flush to the wall surface without spaces under the wire mold. Any spaces created by wall surface deviations such as mortar joints and like transitions shall be filled with an appropriate paintable caulk. All wire mold shall be uniquely marked on the shop drawings to show all locations proposed for use.

- 4.3.5 Contractor shall re-use existing electro-magnetic door hold-open devices at their existing locations. All electro-magnetic door hold-open devices shall be rewired with new conductors, power supply and control.
- 4.3.6 Contractor shall patch all holes, penetrations and other distributed wall, ceiling and finished surfaces for painting. This shall include finish fill and sanding. Prepared surfaces shall be paint ready.
- 4.3.7 The existing fire alarm system shall be maintained operational throughout the installation the new fire alarm system. Disconnect and demolition of the existing system shall only occur after the new system has been tested and accepted by all code authorities. Contractor shall comply with section 4.3.6 for patching.
- 4.3.8 All metallic wire mold shall be prepared and ready for paint.
- 4.3.9 As noted on the drawings, the contractor shall provide a relay module in the control room located in the auditorium to shunt-trip the auditorium audio/public address system. This work shall be coordinated with:

Brandywine Electronics
Mr. Nick Marques
302-420-9487

Part 5 - Acceptance, Testing, and Documentation

5.1 General

- 5.1.1 All fire alarm systems, component parts, and supervisory functions shall be subject to acceptance testing to be conducted by the Contractor. The system shall be completely operational, finished and ready for acceptance testing in accordance with the anticipated project schedule.
- 5.1.2 The Owner shall be notified at least 15 working days prior to acceptance testing with the specific date, time and system being tested.

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- 5.1.3 All approvals (with the exception of the acceptance test approval) required by these specifications shall be completed and submitted with the notification of acceptance test date as required under 5.1.2.
- 5.1.4 All as-built completed drawings required by these specifications shall be completed and submitted with the notification of acceptance test date as required under 5.1.2.
- 5.1.5 All Contractor field testing and manufacturer testing documentation as required by these specifications shall be submitted with the notification of acceptance test date as required under 5.1.2.
- 5.1.6 Contractor shall provide the Owner with three complete manuals of “the specific” fire alarm system being tested. The manuals shall document all components of the system identified by unique number, consistent with the shop drawings and “as-built” drawings.
- 5.1.7 Contractor shall provide all items identified under Sections 5.1.3, 5.1.4, 5.1.5 and 5.1.6 in bounded and labeled three-ring binders with zippered ends. The binders shall be labeled on the cover as follows:

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Each section of the manuals shall be arranged with section tags and documentation as follows.

- a. Project Cover sheet listing project name, contractor, vendor, and consultant.
- b. Manual index.
- c. Service Directory.
- d. Fire Alarm Approvals. Include:

1. Copy of Fire Marshal Application for fire protection plan review, completed and marked paid.
 2. Copy of Fire Marshal's Office plan approval form.
 3. Copy of Fire Alarm Signaling Systems Company License.
 4. Copy of NICET Certification, certificate of technician.
 5. Original of NFPA 72 Fire Alarm System Certification and Description.
 6. Copy of Fire Marshal's System Inspection and Final Approval Form.
- e. Narrative of system description and operation. Include original design notes for basis of design.
 - f. System installation and service manual. (Note that these are two separate documents.)
 - g. Equipment inventory list, with unique identifier labels for each device. Include equipment data sheets.
 - h. Parts list of all components, modules, devices, wiring harness, and cross referenced with unique identifier number/label.
 - i. Divider section labeled "Punch List Items".
 - j. Manufacturer/vendor system testing. This section shall contain all installation, check-out and acceptance testing data as per these specifications.
 - k. First year warranty and test schedule.
 - l. Wire list.

- m. Alarm and Supervisory Zone Descriptor. As worded using actual plain English descriptors.
 - n. As-built drawings. To be installed in protective clear plastic sleeves. One drawing per sleeve.
 - o. CD with electronic copy of AutoCAD as-builts.
 - p. All documentation listed in this section shall include a digital copy on a “thumb-drive” device included with each binder. This includes all as-built drawings, PDF copies of manuals, approvals and items as listed in section 5.1.7 (c) through (n).
- 5.1.8 At the conclusion, the Contractor shall document each part or test result from the acceptance test in a form suitable for installation into the required three-ring zippered binder. It is recommended that the test data collected in the acceptance be performed and documented during Contractor’s system check-out and documented in binder prior to delivery to The Owner. If this recommendation is accepted, acceptance test will be performed much faster and any delays in release of final payment will be avoided.
- 5.1.9 The Owner acceptance of system shall not be completed until all faults, malfunctions and documentation as required by these specifications have been completed, delivered and verified by the Owner.
- 5.2 Fire Alarm System Testing
- 5.2.1 The fire alarm system shall be tested in accordance with the guidelines set forth in these specifications and NFPA 72. All testing shall be documented in a report form to the Owner and in accordance with section 5.1.6 of these specifications. Documentation and testing shall consist of each item noted in NFPA 72 and the following:
- a. Stray voltages between circuit conductors and ground. Verify compliance on as-builts.

- b. Ground faults on all conductors other than those intentionally and permanently grounded should be tested for isolation from grounding using an isolation testing devices such as a “megger”. Documentation of “megger” testing shall identify each conductor in note form on as-builts or in ledger form identifying tested conductor and test results.
 - c. Short circuits on all conductors other than those intentionally and permanently connected together for conductor-to-conductor isolation. To be verified on as-builts.
 - d. Measure and record on as-builts loop resistance with each circuit pair short-circuited at the far end of the circuit with an ohm meter and record the resistance on each circuit as shown on the as-builts.
- 5.2.2 Manufacturer’s representative check. Prior to placing power to the system, a Manufacturer’s representative check-out shall be conducted and verified in writing to the Owner under the requirements of Section 5.1. The report shall contain the following, but shall not be limited to:
- a. A complete list of equipment installed and wired.
 - b. Indicate that all equipment is properly installed and conforms to the manufacturers and these specifications.
 - c. Test individual devices in accordance with NFPA 72 acceptance test criteria Chapter 2, 3, 4, 5, 6, and 7.
 - d. Technician’s name, manufacturer certification, and date.
 - e. Test of individual inputs and outputs for intended function and supervision.
 - f. Test to verify the functional operation of the central monitoring point and remote annunciators individually and as a complete system under the following conditions:

1. Normal operational condition

2. Alarm condition
 3. Under primary power failure
 - g. Test and demonstrate proper coordinated interfaces with HVAC, suppression and extinguishing systems and any other interfaced system or device, under the following conditions:
 1. Normal operational condition
 2. Alarm condition
 3. Under primary power failure
 4. Output function features
 - h. Measure, adjust, and record each smoke detector (including duct smoke detection and beam detection), to its medium sensitivity setting. This must be performed at the operational location of the unit and under normal environmental conditions. The sensitivities shall be recorded with serial number, location number and model number for each detector. Confirm that smoke detectors are within their UL listed sensitivity production window. All sensitivity testing shall be recorded in the documentation or as-builts as required under Section 5.1. All sensitivity recordation shall be in "percent per lineal foot light obscuration", not voltage, using an approved smoke detector sensitivity testing apparatus as listed by the manufacturer.
 - i. Confirm and document that all alarm point annunciation descriptors are correct, in compliance with shop drawings, presented in plain unabbreviated English, and are annunciated to all remote annunciators and printer as required by these specifications.
- 5.2.3 Upon completion of fire alarm testing, the Contractor and respective Manufacturer's authorized field engineer shall conduct functional and instructional tests for The Owner under the guidelines of Section 5.1 and 5.3.
- 5.2.4 Acceptance testing shall be specified by the contractor (see requirements 5.2.1). The Contractor shall develop an outline for approval by The Owner, but at a minimum, the testing shall be as follows:

- a. Confirm all documentation has been received:

As-builts - check accuracy

- plan views
- riser diagram
- panel drawings
- battery calculations
- Disk labeled
- Thumb drive

Manual - check content

- system descriptions
- parts list
- spare parts inventory
- device cut sheets & installed
- schedule for first year's maintenance and testing
- testing documentation of devices and system

- b. Inspect panel for installation, power, etc.

- c. General walk-down of devices to identify any missing device or obvious problems.

- d. Test alarm and annunciation circuits for audio level with dB measurements. Test shall provide an audible alarm with each device on alarm during acceptance testing, hit alarm silence and go on. No walk test mode permitted for acceptance testing.

- e. Test of battery back up.

- full load test for five minutes
- test and record voltage during full load test
- test and record amps during full load test
- test and record recharge amp rating
- test and record battery draw during full load
- normal standby mode in amps

- test and record battery recharge voltage no load = vac
- test and record battery recharge voltage with load = vac

f. Test of primary power.

- voltage=vac/vdc
- circuit breaker tagged and locked open
- surge protection under full load after
- system has been operating on secondary power for 24 hours

g. Audio/Visual circuit amp loads

- circuit #1 = amps
- circuit #2 = amps
- etc.

h. Inspect panel boards for faults.

i. Check spare capacity of system.

j. Check supervision of all circuits, signal and detection.

k. A random sample test of detection, supervisory and pull station devices for function, supervision and proper installation.

l. Confirm English descriptors and labels for zones.

m. A random inspection of junction boxes, terminal/splice point boxes, conduit, wiring and general installation features. Goal of inspection is review of installation for workmanship and specification issues.

n. Copies of hard and magnetic media of software.

o. Additional test as required by individual system design or arrangement.

5.2.5 Audio Acceptance Testing and Adjustments. At the time of acceptance testing the contractor shall conduct the standard NFPA 72 audio level testing throughout the building. In addition, the contractor shall conduct specific audio measurements as shown on the bid documents for the voice evac area. Based upon the readings, if audio levels are not adequate, the contractor shall adjust speaker wattages to bring the audio levels into compliance with minimum code levels.

The contractor shall include in his base bid price sufficient labor to adjust 75% of all installed speaker locations from their original wattage tap to an appropriate up or down tap.

Once wattage taps are adjusted, the contractor shall re-conduct the same audio readings and record the final audio levels on a set of as-built drawings for submission with final documentation as specified in these specifications.

5.2.5 The Contractor shall be responsible to conduct all acceptance testing with the Contractor's calibrated equipment, in the presence of The Owner. The Contractor shall submit at the time of acceptance test notification and outline similar to the one listed in 5.2.3 for approval by the Owner.

5.2.6 At the conclusion, the Contractor shall document each part or test result from the acceptance test in a form suitable for installation into the required three-ring zippered binder.

5.3 Occupancy Testing

5.3.1 Audio Acceptance Testing and Adjustments shall be made with the auditorium at full occupancy. This effort shall be coordinate with the Owner within 30 days of system completion. Using the as-built documentation for audio level testing, the contractor shall conduct the same specific audio measurements as shown on the as-built documents for the two assembly areas using voice evac. Based upon the readings and intelligibility as determined by discussions with the audience, if audio levels are inappropriate, the contractor shall adjust speaker wattages to bring the audio levels to acceptable levels. The Owner shall use logic and reason to determine what is appropriate.

The contractor shall include in his base bid price sufficient labor to adjust 30% of the installed speaker locations located within the two assembly areas, from their existing wattage tap to an appropriate up or down tap.

Once wattage taps are adjusted, the contractor document the final wattage settings on a set of drawings and supplement the as-built documentation.

5.4 Owner Instruction

5.4.1 Contractor or Manufacturer shall provide the Owner's representatives with a minimum of two, two hour classes of formal instruction on the operation, maintenance, service and testing of the fire alarm system, devices and related building interfaces. The instruction shall be scheduled after acceptance testing but prior to final payment.

5.4.2 Contractor and/or Manufacturer shall provide to the Owner an instructional outline for each class with all visual aids. All classes shall be structured consistently with traditional educational standards with performance objectives and testing for all participants. Each student shall receive an instructional certificate indicating number of hours of instruction and satisfactory completion of the course. Owner may video tape class for future use.

5.5 Documentation

5.5.1 Prior to acceptance testing the Contractor shall purchase and install a documentation cabinet adjacent to the primary fire alarm panel. This documentation cabinet shall be keyed alike with the fire alarm panel and shall be large enough to contain a complete set of documentation as described in these specifications. The cabinet shall be the same color and match the fire alarm panel.

PART 6 – Devices Labeling and Software

6.1 Device Demarcation

- 6.1.1 Each and every alarm initiating device, supervisory device, monitoring device, control panel and junction box shall be provided with a unique number which shall be intended to specifically identify that item uniquely within its parent system. The unique number shall be clearly marked on the face of the device so as to be visible from 10 feet from a normal visual position. The type and style of unique label shall be approved by the Owner prior to installation. It shall be a type of label that will survive for a minimum of 10 years under installed conditions.
- 6.1.2 The unique number shall be an identifier within a logical system and numbers shall be assigned in a logical and systematic order.
- 6.1.3 The unique number shall be shown on all shop drawings and other documentation that annunciates, describes or documents said item. This would include inventory listing, materials lists and manuals submitted under Part 5 - Requirements.
- 6.2 Software and Programming
- 6.2.1 Copies and adequate explanatory documentation of all software and programming used in the fire alarm system shall be provided to the Owner within 30 days after acceptance testing approval.
- 6.2.2 The Owner shall own all software and programming that is part of the operational, updating, renovation and maintenance need of the system.
- 6.2.3 If it is a condition of the Contractor or Manufacturer to require licensing of any software or programming, the Contractor and/or Manufacturer shall provide such licensing to the Owner as part of this project. Cost of such licensing shall be part of the base bid package.
- 6.2.4 The Owner shall have the right to modify, use or reproduce for his own use, any software or programming which is part of this project.

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---- END OF SECTION ----

*Contact Delaware Engineering & Design
Corporation for Bid Documents 302-738-7172*

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Form “C” - This is a sample form to be used by the bidder.

Important Note: Electrical contractor shall get an equipment price from each of the three (3) primary vendors. This will require the electrical contractor to submit three separate Form “C” documents duplicating all parts with the exception of parts B, C and D. Parts B, C and D shall be filled out separately for each primary vendor. The purpose of this requirement is to allow the Owner to choose a specific electrical contractor with any of the primary vendors. If the electrical contractor does not include all three (3) vendors, their bid may be rejected.

PROPOSAL FORM “C”

PROJECT NAME: E&H Building - Fire Alarm Replacement

ELECTRICAL CONTRACTOR NAME -

MANUFACTURER’S SYSTEM NAME -

SECTION 00003 - PROPOSAL FORM

The contractor shall submit his quote for construction in duplicate on his letterhead EXACTLY in the following form. Unit prices must include charges including installation and all overhead and profit. **NO OTHER FORM OF PRICE SUBMISSION WILL BE APPROVED. BID SUBMISSIONS NOT SUBMITTED IN THIS FORMAT WILL BE REJECTED WITHOUT REVIEW OR CAUSE.**

TO: Delaware State University

Attention: _____

Gentlemen:

Having carefully examined the Project Specifications (dated October 10th, 2011) the bid drawings and all addenda issued during the bidding period, as well as the premises and conditions affecting the work, the undersigned proposes to furnish all materials and labor for the fire alarm systems in accordance with these documents for the sums itemized below:

Provide description of proposed fire alarm equipment as follows:

BASE BID

PART A: Fire Alarm Equipment -----

Brief description with manufacturer name, type, style, and minimal cut sheet information.

PART B: Fire Detection and Alarm Equipment -----

Brief description with manufacturer name, type, style and minimal cut sheet information. Include smoke detectors, heat detectors, manual pull stations, audio devices, visual devices, conduit and surface conduit types, watertight junction boxes and DAC system interface equipment.

PART C: Unit Pricing -----

Provide "Unit Price" and "Deduct Credit" for "**installed equipment**" beyond the scope of materials listed in the specification as follows:

DEVICE/COMPONENT	UNIT	DEDUCT
a. Manual Pull Stations -----		
b. Monitor Zams -----		
c. Control Zams -----		
d. Smoke Detectors -----		
e. Duct Smoke Detectors -----		
f. Beam Smoke Detectors -----		
g. Heat Detectors -----		
h. Horns -----		

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- j. Strobes -15 cd -----
- k. Horn/Strobes -15 cd -----
- l. Horn/Strobes - 30 cd -----
- m. Horn/Strobes - 75 cd -----
- n. Horn/Strobes - 110 cd -----
- o. Surge protectors -----
- p. Digital Alarm Communicators -----
- q. Signal Circuits -----
- r. Audio Circuits -----
- s. Remote LCD annunciators -----
- t. Smoke detector relocates -----
- u. Conduit per 100 feet installed -----
- v. Wiring per 100 feet installed -----
- w. Speakers -----

PART D: Cost of Project -----

Primary Vendor (Simplex/Siemens/Notifier)

Equipment Cost \$ _____
Contractor Mark-up \$ _____
Total Equipment Cost \$ _____

Contractor

Material Cost \$ _____
Contractor Mark-up \$ _____
Total Material Cost \$ _____

Labor Cost \$ _____

(List hourly rates per trade)

Technician \$/hr. _____
Electrician \$/hr. _____
Laborer \$/hr. _____
Etc. _____

Profit Percent - _____ %
Profit Amount \$ _____

TOTAL BASE QUOTE LUMP SUM\$ _____
(Not including cost of Bonds or alternates)

Note #1: Important Note to bidder:

1. All costs listed under labor shall include any design, engineering, coordinating and/or other costs not included in the Equipment Costs or Material Costs.
2. Percent profit is only taken on the labor cost.
3. Formula for adding cost as follows:

Total Equipment Cost + Total Material Cost + Labor Cost + Percent Profit Amount = **Total Base Quote Lump Sum.**

PART E: EXCEPTIONS -----

EXCEPTIONS, CHANGES OR MODIFICATIONS TO THE BID DOCUMENTS AND FORM "C" WHICH ARE INCLUDED IN THE TOTAL BASE QUOTE LUMP SUM (List each exception completely)

Exception #1, Exception #2, Etc.

EXCEPTIONS, CHANGES OR MODIFICATIONS TO THE BID DOCUMENTS AND FORM "C" WHICH ARE NOT INCLUDED IN THE TOTAL BASE QUOTE LUMP SUM (List each exception completely)

PART F: ADD/ALTERNATES -----

Add/Alternate #1 - Lump sum cost = \$ _____

PART G: ADDENDA -----

The receipt of the following addenda is acknowledged:

Addendum No. _____ Date of Addendum _____

AGREEMENT TO COMPLETE PROJECT AS SPECIFIED BY SCHEDULED DATES

Contractor narrates a paragraph indicating complete responsibility to complete the project as specified.

PART H: WORK PROGRESS AND MANPOWER SCHEDULE -----

Provide a schedule by week through completion indicating the following:

Important Note: A significant portion of the decision process for a successful bidder will be based upon the bidder's ability to complete the work on time. The schedule requested will be used to make that determination. Please take the time to work through the schedule carefully and completely. Incomplete information is an indication of the potential quality of work and capability of the contractor.

- Manpower assigned and working on the project by week. Manpower shall include all subcontractors by subcontractor's name.
- Submittals
- Shop drawing submittals
- Shop drawing corrections
- Equipment order
- Equipment delivery dates "on site"
- Wiring installation by week
- Equipment and device installation by week
- Installation testing - type of testing by week - Include debug testing in this schedule
- Acceptance testing - type of testing by week
- As-built documentation - by week
- Final acceptance day

PART I: NICET LEVEL IV -----

List name and NICET certification number of the person assigned to the project in accordance with the specifications.

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PART J: PROJECT MANAGER -----

List name and experience level of the Project Manager assigned to the project in accordance with specifications.

PART K: SUBCONTRACTORS -----

List below all subcontractors, their addresses and scope of work.

(Insert in numerical order all subcontractors and required information.)

PART L: BONDS -----

Contractor Performance Bond will be executed by (Name Company), if required by the Owner. The bond cost must be listed separately.

Provide total cost and cost per one thousand dollars of construction for the bond.

PART M: PAYMENT SCHEDULE -----

The payment schedule for this project shall be monthly based on AIA using a percent complete format.

PART N: COMPLETION OF PROJECT -----

If awarded the Contract for this work, we will start the work on _____ and carry on the work until completed on _____.

Respectfully submitted,

Date:

Attachments: (list all attachments)

--- END OF FORM "C" ---