

UNIVERSITY OF NEBRASKA

TECHNOLOGY INTEGRATOR AGREEMENT

THIS TECHNOLOGY INTEGRATOR AGREEMENT (“Agreement”) is made this _____ (the “Effective Date”) by and between THE BOARD OF REGENTS OF THE UNIVERSITY OF NEBRASKA, a public body corporate of the State of Nebraska (the “Owner”), and _____ with an address of _____ (the “Technology Integrator” or “TI”).

This Agreement is for the program validation, equipment selection, systems-level design, procurement, installation and commissioning of technology (the “Project”) for a building identified as:

UNIVERSITY of NEBRASKA MEDICAL CENTER (UNMC)
GLOBAL CENTER FOR ADVANCED INTERPROFESSIONAL LEARNING BUILDING
P-15050 (the “Building”)

NOW, THEREFORE, in consideration of the mutual promises, covenants and agreements stated herein, and for other good and valuable consideration, the sufficiency of which is hereby acknowledged, Owner and TI agree as follows:

ARTICLE 1

THE CONTRACT AND THE CONTRACT DOCUMENTS

1.1 The Contract: The Contract between TI and Owner, of which this Agreement is a part, consists of the Contract Documents. The Contract shall be effective on the date this Agreement is effective.

1.2 The Contract Documents: The Contract Documents consist of this Agreement, the Request for Proposals , all Design Documents hereafter prepared by TI and approved by Owner in accordance with this Agreement, Change Orders and Field Orders issued hereafter, any other written amendments executed by Owner and TI, as well as the following (if any):

1. REQUEST FOR PROPOSAL RESPONSE, dated _____.
2. _____

all of which are hereby incorporated herein by reference and made a part hereof.

1.3 Enumerated Documents Form Entire Contract: Documents not specifically enumerated in Section 1.2 of this Agreement are not Contract Documents.

1.4 Services: The “Services” to be performed under the Contract Documents are comprised of the pre-installation services, including the Preliminary and Detailed Systems-Level Designs as described in Section 3.1 (collectively, the “Design Services”), the Preliminary Consultation And Program Verification Analysis as described in Section 4 and the procurement, installation and post installation services (the “Work”). TI is being engaged to ensure that the technology package; all hardware, software, wiring and interfaces are planned, designed, installed, tested, optimized and capable of being operated and maintained to perform in conformity with (i) the Owner’s goals and requirements and (ii) the TI’s basis of design.

1.5 Complete Agreement: The Contract, together with TI’s and Surety’s performance and payment bonds for the Project constitute the entire and exclusive agreements between Owner and TI with reference to the Project. The Contract supersedes any and all prior documents, discussions, communications, representations, understandings, negotiations or agreements by and between the parties.

1.6 Contract Interpreted As A Whole: The Contract is intended to be an integral whole and shall be interpreted as internally consistent. Services required by any page, part, or portion of the Contract shall be required.

1.7 Provision Of All Things Required: Anything that may be required, implied or inferred by the Contract Documents which make up this Contract, or any one or more of them, shall be provided by TI for the Contract Price.

1.8 Privity Only With TI: Nothing contained in the Contract shall create, nor be interpreted to create, privity or any other relationship whatsoever between Owner and any person except TI.

1.9 Agreed Interpretation Of Contract Terms: When a word, term, or phrase is used in this Contract, it shall be interpreted or construed first, as defined herein; second, if not defined, according to its generally accepted meaning in the technology industry; and third, if there is no generally accepted meaning in the technology industry, according to its common and customary usage. Headings are used herein solely for convenience.

1.10 Term "Include" Intended To Be Encompassing: "Include", "includes", or "including", as used in the Contract, shall be deemed in all cases to be followed by the phrase, "without limitation".

1.11 Use Of Singular And Plural: Words or terms used as nouns in the Contract shall be inclusive of their singular and plural forms, unless the context of their usage clearly requires a contrary meaning.

1.12 Definition Of Material Breaches Not Exhaustive: The specification herein of any act, failure, refusal, omission, event, occurrence or condition as constituting a material breach of the Contract shall not imply that any other, non-specified act, failure, refusal, omission, event, occurrence or condition shall be deemed not to constitute a material breach of the Contract.

1.13 Order Of Precedence: In the event of any conflict, discrepancy, or inconsistency among any of the Contract Documents which make up this Contract, the following shall control:

- (1) As between figures given on plans and scaled measurements, the figures shall govern;
- (2) As between large scale plans and small scale plans, the large scale plans shall govern;
- (3) As between plans and specifications, the requirements of the specifications shall govern;
- (4) As between this document and the plans or specifications, this document shall govern.

ARTICLE 2

TECHNOLOGY INTEGRATOR'S REPRESENTATIONS

2.1 Specific Representations: In order to induce Owner to execute this Agreement and recognizing that Owner is relying thereon, TI, by executing this Agreement, and without superseding, limiting, or restricting any other representation or warranty set forth elsewhere in this Agreement or the Contract, or implied by operation of law, makes the following express representations to Owner:

- (1) TI is professionally and fully qualified to act as the system design professional, procurement and installation manager, and the commissioning agent for the Project and is, and will remain, licensed to practice engineering and architecture and general contracting by all public entities having jurisdiction over TI or the Project;
- (2) TI will maintain all necessary licenses, permits or other authorizations necessary to act as TI for the Project until TI's duties hereunder have been fully satisfied;
- (3) TI has the expertise, experience, and knowledge as well as the necessary personnel and financial capability to perform the Services in accordance with the terms of the Contract;
- (4) Prior to the execution of this Agreement, TI has visited and inspected the Project site and the local conditions under which the Project and Building are to be designed, constructed and operated, and TI has performed such tests, if any, as are necessary to determine the conditions under which the Work will be performed, and TI accepts the conditions of the Project and Building site and has taken those conditions into account in entering into the Contract;
- (5) TI assumes full responsibility to Owner for the improper acts and omissions of its Subcontractors or others employed or retained by TI in connection with the Project.
- (6) TI shall use an electronic verification system to determine the work eligibility status of any new employees physically performing services within the State of Nebraska, as required pursuant to Neb. Rev. Stat. §§4-108 to 4-114 as of the effective date of this Contract, or as such law may be amended from time-to-time. Compliance with these Nebraska statutes shall be considered a material term of this Contract.
- (7) TI accepts the relationship of trust and confidence established with the Owner by this Agreement, and covenants with the Owner to furnish the TI's reasonable skill and judgment and to cooperate with Architect and Building Contractor in its performance of the Services and in furthering the interests of the Owner in the management by the TI of the Project in accordance with the Owner's requirements and installation time and cost limitations as approved by the Owner and set forth in the Contract Documents.

ARTICLE 3

REGULATORY GUIDELINES, REQUIREMENTS AND STANDARDS

3.1 Generally: TI shall perform all Services described in, contemplated by, inferable from, or necessary or desirable to achieve the objectives stated in the Request for Proposals, including all Design Services necessary for the Project technology to be properly installed and commissioned by TI and used, operated and maintained by Owner in accordance with all applicable guidelines, requirements and standards. "Design Services" means any and all engineering and design services required to be performed by TI pursuant to the Contract and all labor, materials, supervision, equipment, computers, documents, and all other things necessary for the performance of such services. "Request for Proposals" means the document prepared by Owner dated which specifies the general scope of the Services, including Design Services to be performed by TI under the Contract. A copy of the Request for Proposals is attached hereto as Exhibit A and is incorporated herein by reference. The Design Services shall be performed within the time provided by the Schedule for the performance of TI's Design Services as provided in Section 3.8 of this Agreement.

3.2 Owner's Review Of Design Services: Subject to Section 13.7 of this Agreement, TI shall submit all documents produced as part of the Design Services to Owner's Representative for review and approval in accordance with the terms of the Contract. However, any such review or approval by Owner or Owner's Representative shall not relieve TI of or otherwise diminish its obligations under the Contract. Owner may direct TI to make changes to any such documents in order to

conform such documents to Owner's objectives. Any such changes by TI ordered by Owner shall not relieve TI of its obligations hereunder unless, and only to the extent that, TI notifies Owner in writing within seven (7) days of receipt of Owner's directive to make such changes of any adverse impact on schedules, budgets, operational costs, operational performance, satisfaction of regulatory requirements, or other adverse impact that may result from such changes. Failure of TI to submit its notice within said seven (7) day period shall constitute a waiver by TI of any claim for an adjustment to the Contract Price, the Schedule, or the Contract Time.

3.3 Quality Of Design Services: TI shall be responsible for the professional quality, completeness, accuracy, and coordination of Design Documents. TI shall provide Design Services that will result in an operationally cost-efficient and economical facility that meets all environmental and regulatory requirements as of the date hereof, and uses the most appropriate available technology. TI shall provide for all testing and inspections required by sound industry practices and by governmental authorities having jurisdiction over the Project. The Project must be designed using Building Information Modeling (BIM) software such as Revit /Autodesk 2014, or approved equal.

3.4 Compliance With Laws And Regulatory Requirements: In providing Design Services, TI shall comply with the lawful requirements of all federal, State of Nebraska, and local authorities having lawful jurisdiction over the Project. TI shall design the technology for the Project to meet all applicable requirements of building control laws and regulations in relation to the design, installation, occupation, and operation of the Project and Building, including, without limitation, environmental standards, fire and safety regulations, and requirements and compliance with all other applicable standards and codes.

3.5 Duty To Correct Errors: TI shall, without additional compensation, immediately correct any errors, omissions or deficiencies in its Design Services and Design Documents.

3.6 Schedule Of Work: TI shall submit for Owner's approval the Schedule for the performance of TI's Services which shall include allowance for reasonable time required for Owner's review of submissions and for approvals of authorities having jurisdiction over the Project. The Schedule, when approved by Owner, shall not, except for good cause, be exceeded by TI. Should TI at any time during the course of performing the Contract, have any reason to believe that it will be unable to meet any completion date in accordance with the Schedule, it shall immediately notify Owner's Representative in writing. In such notice, TI shall state the reason for the delay including the party responsible, if any, and the steps being taken to remedy or minimize the impact of the delay. Failure of TI to submit such notice shall constitute a waiver by TI of any claim for an adjustment to the Contract Price, the Schedule, or the Contract Time. All extensions of time shall be governed by Articles 16 and 17 of this Agreement. Subject to the provisions of Section 13.7 of this Agreement, Owner shall review and approve, where appropriate, the Design Schedule, or any portion thereof.

ARTICLE 4

PRELIMINARY CONSULTATION AND PROGRAM VERIFICATION ANALYSIS

4.1 Determining The Project Objectives: Prior to the preparation of the Preliminary Design as required by Article 5 below, TI shall first consult in detail with Owner, and shall carefully analyze any information furnished by Owner concerning requirements of the Project, including but not limited to, any program, design, installation, scheduling, budgetary or operational requirements, limitations, and objectives, as well as the Request for Proposals.

4.2 Report On Project Requirements And Objectives: Based on its study and analysis, and no later than ten (10) days after the effective date of the Contract, TI shall prepare and submit to Owner a written report detailing TI's understanding and analysis of the Project requirements and identifying any design, procurement, installation, scheduling, budgetary, operational, or other problems which may result from said requirements. The written report of TI shall also include proposed solutions,

including design alternatives if appropriate, addressing each of the identified problems. TI shall review such report with Owner and shall implement such changes as Owner may require as provided in Section 3.2 of this Agreement.

ARTICLE 5

PRELIMINARY SYSTEMS-LEVEL DESIGN

5.1 Time For Preliminary Design: Not later than _____, _____, after reviewing with Owner the written report required by Section 4.2 above (if the foregoing blank not filled in, then within a reasonable time so as not to delay Substantial Completion), TI shall prepare and submit to Owner a Preliminary Design for the Project.

5.2 Contents Of Preliminary Design: The Preliminary Design shall address all requirements of the Project and shall include, without limitation, the following:

(1) Preliminary Building Information Model (BIM) utilizing Revit/Autodesk 2014 software and a BIM Execution Plan consistent with Exhibit C

(3) A written description of the materials and equipment to be incorporated into the Project and the location of same;

(4) Any other documents or things required to illustrate, describe or depict the Preliminary Design and the conformity of same with the requirements of the Request for Proposals and the Contract.

5.3 To Be Reviewed With Owner: TI shall review with Owner the Preliminary Design and shall incorporate any changes ordered by Owner with respect to said Preliminary Design or with respect to the requirements of the Project.

5.4 Preliminary Design Cost Estimate: Based on any adjustments authorized by the Owner in the program, schedule or installation budget, the TI, in consultation with the Owner and Architect, shall prepare for approval by the Owner a cost estimate of the projected cost of Project with a contingency for additional cost of no more than ten percent (10%).

5.5 Authorization To Proceed With Detailed Design: After review of the Preliminary Design and incorporation of any changes ordered by Owner, Owner shall authorize TI in writing to commence preparing the Detailed Design, or such part thereof as directed by Owner.

ARTICLE 6

DETAILED EQUIPMENT SELECTION AND SYSTEM-LEVEL DESIGN

6.1 Time For Preparation: Not later than _____, _____, after Owner has authorized TI to commence with the Detailed Design as provided in Section 5.5 above, TI shall prepare and submit to Owner the complete Detailed Design.

6.2 Detailed Equipment Selection: The TI shall provide guidance and assistance to the Owner in selecting technology hardware and software that meets the requirements of the Project. The TI shall provide the Owner with product data, arrange product demonstrations, schedule interviews with product vendors and facilitate site visits to view products in operation. TI shall make Equipment Selection recommendations to the Owner based on product data, demonstrations, benchmarking, best practices and the TI's expertise without bias or reliance on a particular technology or manufacturer.

6.3 The Detailed Design: The Detailed Design shall include all Design Documents which shall describe with specificity all elements, details, components, equipment, materials, and other information necessary for the complete installation integration of technology and the rendering of the Project fully operational for its intended purposes, including satisfaction of all testing, permitting, qualifications, certifications, validations, and obtaining regulatory approvals by all applicable regulatory authorities required to render the Project and all its components operational and functionally and legally usable for their intended purpose. Subject to the provisions of Section 13.7 of this Agreement, Owner shall review and approve, where appropriate, the Design Documents, or any portion thereof.

6.4 Design Documents: "Design Documents" means all the design documents provided by TI and approved by Owner pursuant to the Contract including, without limitation, those for use in procuring and installing the Project technology, performing the Work, and the rendering of the Project fully operational, and shall include, without limitation, detailed Building Information Model (BIM) utilizing Autodesk Revit 2014 software (See Exhibit C), plans, drawings, specifications, manuals, Guaranteed Maximum Price proposal and related materials prepared by or on behalf of TI.

6.5 General Commissioning Requirements Specification: Produce the General Commissioning Requirements Specification, to include all items in Article 12.

6.6 Operation and Maintenance: Recommend long-term operation and maintenance strategies and requirements, to the Owner.

6.7 Long Lead Items: The TI shall recommend to the Owner, Architect and Contractor a schedule for procurement of long-lead-time items which will constitute part of the Work as required to meet the Project schedule. Prior to Owner's acceptance of the Technology Integrator's Guaranteed Maximum Price proposal in accordance with Article 7, upon the approval of Owner, TI shall procure such long-lead-time items at the Owners' expense. The GMP proposal shall include all long-lead time items previously approved or anticipated as part of the Project. Upon the Owner's acceptance of the GMP proposal, all contracts for items procured prior to acceptance of the GMP proposal may, at Owner's option, be assigned by the Owner to the Technology Integrator, who shall accept responsibility for such items as if procured by the Technology Integrator.

ARTICLE 7

GUARANTEED MAXIMUM PRICE

7.1 Basis Of Guaranteed Maximum Price: The TI shall submit to Owner, in accordance with the approved Schedule, a Guaranteed Maximum Price proposal, which shall include a written statement of the basis of the Guaranteed Maximum Price which shall include:

- (1) A list of the System-Level Design Documents, including all drawings and specifications and all addenda thereto, which were used in preparation of the Guaranteed Maximum Price proposal.
- (2) A list of allowances and a statement of their basis.
- (3) The TI's Contingency for additional cost of no more than 2.5 Percent (2.5%) of the Installation Costs.
- (4) A list of the clarifications and assumptions made by the TI in the preparation of the Guaranteed Maximum Price proposal to supplement the information contained in the Design Drawings.

(5) The proposed Guaranteed Maximum Price, including a statement of the estimated costs organized by trade categories, allowances, contingency, and other items that comprises the Guaranteed Maximum Price.

(6.) The proposed Guaranteed Maximum Price shall be derived from competitive bids received from subcontractors and material suppliers. Any self-performed work by the TI must be approved in advance by the Owner on a cost-plus a fee basis which shall be included within the Installation Cost. The TI shall strive to receive competitive bids from independent subcontractors, unless approved in advance by the Owner, for comparison to estimates for self-performed work. Estimates for self-performed work shall be complete in all regards to include any additional Supervision and or General Conditions. The TI shall provide the Owner full disclosure of estimates for self-performed work in accordance with 7.1.7.

(7.) The GMP process, as determined by the TI and Owner, shall be transparent to the Owner and Architect in sufficient detail to represent all Technology Installation Costs. The Owner shall also have access to all estimates or competitive bid proposals received from subcontractors and material suppliers as summarized in writing by the TI. The TI shall consult with the Owner prior to the award of subcontracts to subcontractors and major material suppliers.

7.2 Review Of Proposed GMP: The TI shall meet with the Owner to review the Guaranteed Maximum Price proposal and the written statement of its basis. In the event that the Owner discovers any inconsistencies or inaccuracies in the information presented, they shall promptly notify the TI in writing of such inconsistencies or inaccuracies and the TI shall make appropriate adjustments to the Guaranteed Maximum Price proposal, its basis or both.

7.3 Acceptance, Rejection, Negotiation Of GMP: The Owner must accept or reject the Guaranteed Maximum Price proposal in writing no less than fifteen (15) calendar days after the receipt of the Guaranteed Maximum Price proposal by the Owner. The Guaranteed Maximum Price proposal shall not be effective without written acceptance by the Owner. If the Owner rejects the Guaranteed Maximum Price proposal, the Owner and TI shall again review the Guaranteed Maximum Price and the written statement of its basis, and seek to negotiate a Guaranteed Maximum Price the Owner will accept. As part of such negotiations, the TI shall make appropriate recommendations to the Owner for cost reductions, including but not limited to, substitution of materials or revisions or alterations to the Installation Documents to bring the Project within the Overall Installation Budget that shall not delete necessary components of the Project, as determined in Owner's sole discretion, or materially reduce the functional requirements of the Project as reflected in the Installation Documents. If agreement on a Guaranteed Maximum Price is not reached within thirty (30) days of the date of the Owner's written rejection of the Guaranteed Maximum Price proposed by the TI, this Agreement shall be terminated pursuant to the provisions of Article 20.

7.4 PRE-GMP Expenses To Be Reimbursed: Prior to the Owner's acceptance of the TI's Guaranteed Maximum Price proposal and issuance of the Notice to Proceed, the TI shall not incur any cost to be reimbursed as part of the GMP, except as the Owner may specifically authorize in writing.

7.5 Savings On GMP: Should the TI complete the Project for less than the GMP, 100 Percent (100%) of the remaining funds shall be credited to the Owner as a deduction from the GMP; and the TI shall also return to the Owner One Hundred Percent (100%) of the unused funds from the TI's Contingency.

7.6 Amendment Of Project Scope Document To Reflect GMP: Upon the Owner's approval of the GMP Agreement, the GMP and its basis shall be set forth in the Exhibit D, "Guaranteed

Maximum Price (GMP) Agreement,” incorporating therein the GMP Proposal submitted by the TI, with any amendments thereto during the negotiations process. The GMP shall be subject to additions and deductions only by Change Order approved by the Owner as provided in the Contract Documents and the date of Substantial Completion set forth in the approved Schedule shall only be subject to adjustment as provided in this Agreement. IF THE GUARANTEED MAXIMUM PRICE IS EXCEEDED, THE TI SHALL BE RESPONSIBLE FOR PAYMENT FROM ITS OWN RESOURCES WITH NO CONTRIBUTION FROM THE OWNER FOR THE DIFFERENCE BETWEEN THE CONTRACT SUM AND THE GUARANTEED MAXIMUM PRICE AS ADJUSTED BY CHANGE ORDERS, IF ANY.

7.8 Revision Of Design Documents Per GMP: The Owner shall authorize and cause the Architect to timely revise the Architect’s Drawings (including the drawings and specifications) to the extent necessary to reflect the agreed-upon assumptions and clarifications contained in Scope of Project, for the Project as amended upon acceptance of the GMP. Such revised Architect’s Documents shall be furnished to the TI in accordance with the Schedule agreed to by the Owner, Architect and TI. The TI shall promptly notify the Architect and Owner if such revised Architect’s Documents are inconsistent with the agreed-upon allowances, assumptions and clarifications.

ARTICLE 8 PROCUREMENT AND INSTALLATION SERVICES

8.1 General Intent: TI shall perform all Work necessary to procure and install technology in accordance with the Contract and to render the Project and all its technology components operational and functionally and legally usable for their intended purpose.

8.2 Work Defined: The term “Work” shall mean whatever is done by or required of TI to perform and complete its duties relating to the procurement and installation of the Project under the Contract, including, without limitation, the following, all in conformance with the Contract Documents and all applicable laws:

- (1) Procurement and Installation of the Project in full and strict conformity with the Contract;
- (2) The provision and furnishing in coordination with the Building Contractor, and prompt payment therefore, of all labor, supervision, services, materials, supplies, equipment, fixtures, appliances, facilities, tools, transportation, storage, and things required for the Project;
- (3) The procurement and furnishing of all necessary building permits and other permits required for the procurement and installation of the Project;
- (4) The creation and submission to Owner a Building Information Model (BIM) utilizing Autodesk Revit 2014 software (See Exhibit C), depicting all technology installation;
- (5) The furnishing of any required surety bonds and insurance as required by the Contract;
- (6) The furnishing of all equipment and product warranties, manuals, test results and user guides required by the Contract or otherwise reasonably available to TI;
- (7) The furnishing of all other services and things required or reasonably inferable from the Contract Documents, including the provisions of Article 10 below.

8.3 Competitive Bidding: The TI shall obtain competitive bids from subcontractors and from suppliers of materials or equipment fabricated to a special design for all of the Work, including all Work proposed to be provided by TI as part of TI’s Self Performed Work. As part of the process of obtaining competitive bids for the Work, the TI shall perform the following responsibilities:

- (1) The TI shall develop bid packages and solicit subcontractor interest in the Project with emphasis on the development of bid packages that will encourage participation by local contractors.
- (2) Those portions of the Work that the TI does not customarily perform with the TI's own personnel shall be performed under Subcontracts or by other appropriate agreements with the TI. The TI shall obtain bids from subcontractors and from suppliers of materials or equipment fabricated to a special design for all of the Work and, after analyzing such bids, shall deliver the bids to the Owner. The TI or Owner may require bidders to submit bid bonds or other bid security acceptable to the TI and Owner as a prerequisite to bidding on portions of the Work to be performed by Subcontract. The TI shall determine, with advice from Owner, and subject to reasonable objection of the Owner, which bids will be accepted as the lowest responsible bid for portions of the Work to be performed by Subcontract. The Owner may designate specific persons or entities from which the TI shall obtain bids. The TI shall not be required to contract with anyone to whom TI has a reasonable objection.
- (3) In all cases in which a manufacturer's name, trade name or other proprietary designation is used in connection with materials or articles to be furnished under the Contract Documents, whether or not the phrase "or equal" is used after such name, the TI shall furnish the product of the named manufacturer(s) without substitution, unless a written request for a substitute has been submitted by the TI and approved in writing by the Owner. Additionally, if the TI proposes to use a material, a system or article which, while suitable for the intended use, deviates in any way from the detailed requirements of the Contract Documents, the TI shall inform the Owner in writing (on such form as the Owner may require for such purpose) of the nature of such deviation(s) at the time the material, system or article is submitted for approval or consideration, and shall request written approval of the deviation from the requirements of the Contract Documents. By submitting such material or article for approval, the TI (i) represents that the TI has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified, (ii) represents that the TI will provide the same warranty for the substitution that the TI would for that specified, (iii) certifies that the cost data presented (add or deduct) is complete and includes all related costs under this Agreement including the Architect's evaluation, redesign and other costs for indirect modifications to other materials, if any, and waives all claims for additional costs related to the substitution which subsequently become apparent, and (iv) will coordinate with the installation of the accepted substitute, making such changes as may be required, whether required by the Architect or otherwise, for the Work to be completed in all respects. After requesting approval of any deviations or substitutions to materials, systems or articles, the Architect and Owner may reject such substitutions or deviations in their sole discretion without further investigation.

8.4 Progress Meetings: The TI shall participate in progress meetings, on a bi-weekly basis or more often at which the Owner, Architect, Building Contractor, TI and appropriate subcontractors can discuss the status of the Work.

8.5 Subcontractors: The TI shall manage all Technology Subcontractors including but not limited to the following:

- (1) All Subcontracts shall be between the subcontractor as a party thereto and the TI. All Subcontracts shall be in a form acceptable to the Owner and shall include, but not be limited to, (i) that each subcontractor shall be bound by the terms of the Contract Documents, including responsibility for safety of subcontractor's Work under the direction of the TI, (ii) that each subcontractor shall preserve and protect the rights

of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the subcontractor and (iii) in the event that the Owner or Owner terminates the TI, the subcontract shall be assignable to the Owner.

- (2) **Corrective Action Plans:** Progress of the Work shall be reported with reference to the Schedule. The TI shall submit to the Owner with each monthly Application for Payment a copy of the subcontractor progress schedule showing all modifications required, and shall take whatever corrective action is reasonably necessary to assure that the subcontractors' project completion schedule is met at no additional cost to Owner, except as otherwise allowed herein.
- (3) **Subcontractor Recovery Plan:** In the event that a subcontractor shall fall behind schedule at any time, the TI shall develop with that subcontractor a recovery plan and deliver the recovery plan to the Owner and Architect with a recovery schedule and a program describing the additional manpower, overtime, material expediting, re-sequencing of the Work and other steps the subcontractor shall take to meet the requirements of the Subcontract. No approval or consent by the Owner of any plan for re-sequencing or acceleration of the Work submitted by subcontractor shall constitute a waiver by Owner of any damages or losses which Owner may suffer by reason of such re-sequencing or the failure of subcontractor or the TI to meet the date established for Substantial Completion and Final Completion under the Schedule.
- (4) **Evaluation And Supervision Of Subcontractors:** The TI shall determine the adequacy of subcontractors' personnel and equipment, and the availability of materials and supplies to meet the Schedule. In consultation with the Owner, the TI shall take necessary corrective actions when requirements of a Subcontract or a subcontractor's schedule are not being met, at no cost to the Owner. The TI shall have control over or charge of acts or omissions of the subcontractors, or their agents or employees performing portions of the Work and the TI is responsible to reasonably determine the existence of and advise the Owner of the existence of such acts or omissions.
- (5) **Owner's Right To Stop Work:** Without prejudice to any of the remedies which may be available to Owner at law or in equity, if the TI or its subcontractors fail(s) to correct Work that is not done in accordance with the requirements of the Contract Documents or repeatedly fail(s) to carry out Work in accordance with the Contract Documents, Owner may issue a written order to the TI to stop the Work, or any portion thereof, until the cause for such order has been eliminated. Nothing in this Agreement to the contrary shall prevent Owner from having the absolute and unconditional right to stop the Work at any time with or without cause.

8.6 Monthly Reports/Daily Log: The TI shall provide monthly written reports to the Owner on the progress of the entire Work. The TI shall maintain a daily log containing subcontractors working on the site, number of workers, Work accomplished, problems encountered and other similar relevant data as the Owner may reasonably require. Upon request, the TI shall provide copies to the Owner.

8.7 Accounting And Accounting Records: The TI shall maintain a system of accounting consistent with generally accepted accounting principles. The TI shall preserve all accounting records for a period of five (5) years after Final Completion of the Work. The Owner shall have access to all such accounting records at any time during the performance of the Work and upon reasonable written notice to TI for a period of five (5) years after final acceptance of the Work.

8.8 Cost Control System: The TI and Owner will collaborate to develop and maintain an effective system of cost control for the Project and the Work. The TI under its cost control system shall monitor actual costs for activities in progress and estimates for uncompleted tasks and proposed

changes and shall identify variances between actual costs and budgeted or estimated costs and advise the Owner and Architect whenever projected costs are below or exceed budgets or estimates. Cost control reports shall be included as part of the monthly written report to be provided by the TI.

8.9 Quality Control Procedures: The TI shall develop and maintain a program, acceptable to the Owner, to assure quality control of the installation. The TI shall manage the Work of all subcontractors, providing directions to each when its Work does not conform to the requirements of the Installation Drawings and continue to manage each subcontractor to ensure that corrections are made in a timely manner so as not to affect the progress of the Work. As part of its quality control requirements, the TI shall ensure that the Owner shall have access to all aspects of the Work while it is in progress for purposes of ensuring that the Work complies with the Installation Drawings. In the event that TI or its subcontractors enclose any portion of the Work prior to the Owner confirming completion of same in accordance with the Contract Documents, TI shall be solely responsible for re-opening such Work for inspection by the Owner and any delays related to such re-opening shall not impact the Contract Time.

8.10 Installation Coordination:

- (1) The TI shall establish on-site organization and lines of authority in order to carry out the overall plans of installation and shall provide written notice of the lines of authority to the Owner and Building Contractor.
- (2) Procedures For Coordination: The TI shall coordinate with the Owner, Building Contractor, subcontractors and TI with respect to all aspects of the Work and provide coordination drawings of the technology subcontractors as may be necessary to properly coordinate the Work among the subcontractors. In coordination with the Owner, the TI shall establish and implement procedures for tracking and expediting the processing of shop drawings, samples and similar submittals required by the Installation Documents in accordance with submittal schedules approved by the Owner.
- (3) Owner's Right To Carry Out The Work: Without prejudice to any other right or remedy which may be available to Owner at law or in equity, if the TI defaults or neglects to carry out the Work in accordance with the Contract Documents, the Owner may commence and continue the Work in accordance with the Contract Documents. In such case, an appropriate Change Order shall be issued deducting from payments then or thereafter due the TI the reasonable cost of performing such Work, including correcting such deficiencies and including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure by TI.

ARTICLE 9

TIME FOR INSTALLATION: THE CONTRACT TIME

9.1 Notice Of Commencement: After Owner has approved the GMP, Owner shall issue a notice to commence the Work directing TI to proceed with the Work on the date indicated in the notice (the "Commencement Date"). The notice to commence Work shall be issued at least ten (10) days prior to the Commencement Date.

9.2 Time For Completion: TI shall commence the Work on the Commencement Date, and the Work shall be carried out regularly and without interruption. TI shall substantially complete the Work not later than _____, _____ or such other date as may by Change Order be designated (the "Scheduled Completion Date"). The number of calendar days between the effective date of the

Contract and the Scheduled Completion Date is the "Contract Time". TI shall achieve Final Completion of the Work no later than thirty (60) calendar days after achieving Substantial Completion.

9.3 Time Is Of The Essence: All limitations of time set forth herein are material and time is of the essence of the Contract.

ARTICLE 10

ADDITIONAL DUTIES AND RESPONSIBILITIES OF TI

10.1 TI To Perform All Services Required By The Contract: The intent of the Contract is to require complete, correct and timely execution of the program validation, equipment selection, systems-level design, procurement, installation and commissioning of technology for the Project. Any and all Services that may be required, reasonably implied or reasonably inferred by the Contract, or any part of it, as necessary to produce the intended result shall be provided by TI in accordance with Article 11 of this Agreement and without increase to the Contract Price.

10.2 Strict Compliance With The Contract Documents: All Services performed by TI shall be in strict compliance with the Contract. "Substantial compliance" is not strict compliance. Any Work not in strict compliance with the Contract is defective.

10.3 Supervision Of The Work: The Work shall be strictly supervised and directed using TI's best and highest skill and effort, TI bearing full responsibility for any and all acts or omissions of those engaged in the Work on behalf of TI.

10.4 Warranty Of Workmanship And Materials: TI warrants and guarantees to Owner that all labor furnished to progress the Work under the Contract will be competent to perform the tasks undertaken and is the best quality obtainable in strict compliance with the Contract, that the product of such labor will yield only results in strict compliance with the Contract, that materials and equipment furnished will be of high quality and new unless otherwise permitted by the Contract, and that the Work will be of high quality, free from faults and defects and in strict conformance with the Contract. Any and all Work not strictly conforming to these requirements shall be considered defective and shall constitute a breach of TI's warranty. The general warranty period will conclude one year from the date of Substantial Completion.

10.5 Commencement Of Guarantee And Warranty Periods: Special or specific guarantees and warranties which are required by the Contract to run for a fixed period of time shall commence running on the date of Substantial Completion of all the Work.

10.6 TI's Schedule Of Installation: TI, within fifteen (15) days after the Commencement Date, shall submit to Owner, for its information, and comply with, TI's Schedule of Installation for completing the Work by the Scheduled Completion Date. The Schedule of Installation shall reflect the performance of all Work on weekdays and non-holidays. The Schedule of Installation shall be a detailed critical path schedule in a form acceptable to Owner. The Schedule of Installation shall be revised at least monthly and shall be revised to reflect conditions encountered from time to time and shall be related to the entire Project. Each such revision shall be furnished to Owner. Strict compliance with the requirements of this Section shall be a condition precedent for payment to TI, and failure to strictly comply with said requirements shall constitute a material breach of the Contract.

10.7 Record Copy Of Contract Documents: TI shall continuously maintain, for the benefit of Owner, an updated copy of the Contract, including one record copy of the Contract Documents marked to record on a current basis changes, selections and modifications made during installation. Additionally, TI shall maintain at the site, for the benefit of Owner, a copy of all Shop Drawings,

Product Data, Samples, and other Submittals. Upon Final Completion of the Work, or upon Owner's request, all of the documents described in this Section shall be finally updated and delivered to Owner and shall become the property of Owner.

10.8 Review And Approval Of Submittals: TI shall review, study, and approve, or take other necessary action upon all Shop Drawings, Product Data, Samples, and other Submittals to ensure that the Project will be constructed in a timely fashion in strict compliance with the Contract.

10.9 Owner's Option To Review Submittals: Owner shall, in its discretion, have the right to review and approve Submittals, and if Owner so elects, TI shall not perform any portion of the Work as to which Owner has required submittal and review until such Submittal has been approved by Owner's Representative. Approval by Owner, however, shall not be evidence that Work installed pursuant thereto conforms with the requirements of the Contract nor shall such approvals relieve TI of any of its responsibilities or warranties under the Contract. If Owner elects to review Submittals, TI shall maintain a Submittal log which shall include, at a minimum, the date of each Submittal, the date of any re-submittal, the date of any approval or rejection, and the reason for any approval or rejection. TI shall have the duty to carefully review, inspect and examine any and all Submittals before submission of same to Owner. Shop Drawings and other Submittals from TI do not constitute a part of the Contract.

10.10 Procurement And Review Of Warranties: TI shall procure from all Subcontractors and Suppliers and shall transmit to Owner, all warranties required by the Contract. TI shall review all such warranties and shall certify to Owner that the warranties are in strict compliance with the requirements of the Contract.

10.11 Procurement Of Operations And Maintenance Documentation: TI shall prepare or procure and shall transmit to Owner all documentation required by the Contract regarding the operation and recommended maintenance programs relating to the various elements of the Work.

10.12 As-Built Drawings: TI shall prepare and provide to Owner a completed As-Built Building Information Model (BIM) utilizing Autodesk REVIT 2014 software (See Exhibit C), which shall be complete and, except as specifically noted, shall reflect performance of the Work in strict compliance with the requirements of the Contract.

10.13 Compliance With Labor Laws: TI shall assume all labor responsibility for all personnel assigned to or contracted for the performance of the Work and agrees to strictly comply with all its obligations as employer with respect to said personnel under all applicable labor laws.

10.14 Testing, Inspections, And Approvals: Except for inspection and testing specified as the Owner's responsibility, the TI shall be responsible for procuring all tests and inspections required by sound professional practices and by governmental authorities having jurisdiction over the Project, and shall assume the cost of such tests and testing. TI shall request the testing or inspection agency to submit certified results of such tests to the TI and Owner independently. If the laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any Work to be specifically inspected, tested, or approved, TI shall assume full responsibility therefore, pay all costs in connection therewith and furnish to Owner the required certificates of inspection, testing or approval.

10.15 Owner's Regulations And Applicable Laws: TI shall, during the course of the Work, comply with any regulations or guidelines prescribed by Owner. TI warrants that it will comply with all public laws, ordinances, rules and regulations applicable to the services to be performed under the Contract, including without limitation, those relating to the terms and conditions of the employment of any person by TI in connection with the Work to be performed under the Contract.

10.16 Compliance With Installation Regulations: TI shall perform the Work in accordance with all installation codes, laws, ordinances or regulations applicable to the design and execution of the

Work. Any fine or penalty which may be imposed as consequence of any violation of this provision shall be paid by TI, and TI shall indemnify and hold Owner harmless from all loss, damages, and expense, including attorney's fees, resulting from any such violation or alleged violation.

10.17 Permits, Licenses And Notices: All installation and building permits, licenses and authorizations necessary for the installation of the Project shall be secured by TI. TI shall notify Owner's Representative when it has received said permits, licenses and authorizations and upon receipt shall supply Owner with copies of same. The originals of said permits, licenses and authorizations shall be delivered to Owner upon completion of the Work, and receipt of such documents by Owner shall be a condition precedent to final payment. TI shall also give and maintain any and all notices required by applicable laws pertaining to the installation of the Work.

10.18 Conditions To Site Access: While on Owner's property, all TI's employees and Subcontractors shall confine themselves to areas designated by Owner's Representative and will be subject to Owner's badge and pass requirements, if any, in effect at the site of the Work.

10.19 Site Safety And Security: TI shall take all reasonable steps and legally required measures at the site to comply with applicable safety regulations and standards and to adequately protect the Work, stored materials, and temporary structures located on the premises, and to prevent unauthorized persons from entering upon the site. TI shall at all times safeguard Owner's property and employees from injury or loss in connection with the performance of the Contract. TI shall at all times safeguard and protect its own partially or completely finished Work and that of the adjacent property and all adjacent work from damage. TI shall protect Owner's equipment, apparatus, machinery, and other property and all adjacent work with boarding and other safeguards so as to keep the premises free from dampness, dirt, dust, or other damage and shall remove all such temporary protection upon completion of the Work.

10.20 Repair Of Collateral Damages: Unless otherwise instructed by Owner, TI shall repair and return to original condition all buildings, streets, curbs, sidewalks, utilities or other facilities affected by TI's performance of the Work, all without additional cost to Owner.

10.21 Cleaning The Site: TI shall keep the site reasonably clean during performance of the Work. Upon Final Completion of the Work, TI shall thoroughly clean the site and the Project and remove all waste, debris, trash and excess materials or equipment, together with TI's property therefrom.

10.22 Off-Site Storage: The TI shall furnish and maintain a suitable storage site and proper storage conditions, which must be approved in advance by the Owner. Equipment and materials covered by a request for payment must be stored above grade, and must be protected at all times against weather, heat, cold, moisture, vandalism, theft and other hazards as the material may require. All such protection shall be provided by the TI at its expense throughout the storage period. Off-site stored materials and equipment shall be stored separately and not commingled with other similar materials and equipment, and shall be plainly labeled "PROPERTY OF THE UNIVERSITY OF NEBRASKA", with project name.

10.23 Owner's Access To Work: At all times relevant to the Contract, TI shall provide access to the Work to Owner and its designees without formality or other procedure.

10.24 Decisions Regarding Aesthetic Effect: Owner's decisions in matters relating to aesthetic effect shall be final if consistent with the intent of the Contract.

10.25 Sales and Use Tax Exemption for Tangible Personal Property: The Project shall be exempt from payment of sales and use taxes on the price of tangible personal property to be incorporated into the Project. The Owner, acting as a state agency, will appoint the TI as a purchasing agent for the Owner in the manner prescribed by Nebraska law. Such appointment will authorize the TI and its Subcontractors to issue exempt sales certificates as provided by law to vendors when purchasing tangible personal property to be incorporated into the Project.

10.26 Notice to Those Who May Be Affected by the Work: At least 48 hours before any utility interruption or other interruption to the Project site caused by the Work, TI shall give written notice to Owner and other persons or entities that may be affected by the Work. Such notice shall not relieve TI from any claims for damages to persons or property caused by TI's negligence or wrongful acts in performing the Work.

10.27 Signs: TI shall furnish and maintain all signs required by law for performance of the Work, if any. The display of signs at the Project site, other than those required by law, shall be limited to those permitted by the Contract Documents or those necessary for safety and the orderly management of the Project site.

10.28 Royalties and License Fees: The TI shall pay all royalties and license fees. If a particular process, product or device is specified in the Contract Documents and is known to be subject to patent rights, copyright or other intellectual property rights, the existence of such rights shall be disclosed in the Contract Documents, and the TI shall be for payment of all associated royalties and license fees. To the maximum extent permitted by law, the TI shall indemnify, hold the Owner harmless, and defend all suits, claims, losses or damages resulting from infringement of patent rights, copyright, or other intellectual property rights resulting from incorporation into the Work of any design, process, product, or device specified in the Contract Documents.

10.29 TI To Remain An Independent Contractor: In the performance of the Contract, TI's status as an independent contractor shall not be modified or diminished by reason of any instructions issued by Owner or Owner's Representative to TI or any of TI's employees, Subcontractors, or representatives.

10.30 Verification: Verify all hardware, equipment and materials are delivered and installed as specified and per bill of materials.

ARTICLE 11

PAYMENT OF THE CONTRACT PRICE

11.1 Payment Procedure: Owner shall pay the Contract Price to TI in accordance with the procedures set forth in this Article 11.

11.2 Allocation Of Contract Price: The Contract Price shall be allocated among the program validation, equipment selection and systems-level design; procurement and installation; and commissioning of technology for as follows:

_____ Dollars (\$_____) of the
Contract Price shall be allocated to Program Validation

_____ Dollars (\$_____) of the
Contract Price shall be allocated to Preliminary Systems Level Design

_____ Dollars (\$_____) of the
Contract Price shall be allocated to Detailed Equipment Selection, System-Level Design
and GMP

_____ Dollars (\$_____) of the
Contract Price shall be allocated to Procurement and Installation

_____ Dollars (\$_____) of the
Contract Price shall be allocated to Commissioning of Technology

_____ Dollars (\$_____) of the
Contract Price shall be allocated to completion of As-Builts, BIM and Close-out

_____ Dollars (\$_____) of the
Contract Price shall be allocated to Post Occupancy Commissioning

11.3 Payment For Pre-Installation Services: The amount of the Contract Price allocated to the Design Services shall be paid based upon TI's achievement of each of the milestones described in Exhibit B. Upon achievement of each of the milestones described in Exhibit B, TI shall submit a Pay Request with appropriate backup documentation. In its Pay Request for Design Services, TI may request payment for ninety per cent (90%) of the value allocated for such Design Services as provided in this Article 11. Owner shall pay such invoice as provided in this Article 11.

11.4 Payment For Installation Services - Schedule Of Values: Within ten (10) calendar days after the commencement of installation, TI shall prepare and present to Owner a Schedule of Values allocating among the different elements of the Work that portion of the Contract Price assigned to the Work. TI's Schedule of Values shall be prepared in such form, with such detail, and supported by such data as Owner may, at its option, require. TI shall not front-end load its Schedule of Values, shall not imbalance its Schedule of Values nor assign a value to any element which exceeds its true value. The allocated value of each item in the Schedule of Values shall only include its total cost and proportionate share of any general overhead and profit. Any violation by TI of the requirements of this Section shall constitute a material breach of the Contract. The Schedule of Values shall be used only as a basis for TI's pay requests and shall only be so used after it has been acknowledged in writing by Owner.

11.5 Payment For Commissioning Services: The amount of the Contract Price allocated to the Commissioning Services shall be paid based upon TI's achievement of each of the milestones described in Exhibit B. Upon achievement of each of the milestones described in Exhibit B, TI shall submit a Pay Request with appropriate backup documentation. In its Pay Request for Design Services, TI may request payment for ninety per cent (90%) of the value allocated for such Design Services as provided in this Article 11. Owner shall pay such invoice as provided in this Article 11.

11.6 Time For Installation Pay Requests: On or before the 15th day of each month after commencement of the Work, but no more frequently than monthly, TI shall submit a pay request for the Work performed through the last day of the previous month.

11.7 Progress Payments For Installation Services: Based upon TI's pay requests submitted to Owner, Owner shall make progress payments to TI on account of the Contract Price less such amounts, if any, owing by TI to Owner or which Owner shall have the right to withhold as authorized by this Agreement.

11.8 Contents And Amounts Of Pay Requests: Installation pay requests shall be in such form and manner, and with such supporting data and content as Owner may require. In its installation pay request, TI may request payment for (1) ninety percent (90%) of the value allocated to that portion of the Work properly performed through the applicable date in the pay request; plus (2) ninety percent (90%) of that portion of the Contract Price properly allocable to materials or equipment necessary for the Work and properly stored at the Project site (or elsewhere if approved in advance in writing by Owner); less (3) the total amount of previous payments received from Owner for the Work. A request for payment for materials and equipment stored off-site shall be accompanied by (i) a bill of sale, properly identifying the material or equipment and transferring ownership to the University of Nebraska, and (ii) an inventory of stored materials and equipment that includes a description of the storage site by street number and city or legal description of the premises. Payment on account of stored materials or equipment shall also be conditioned upon TI's proof, satisfactory to Owner, that the materials or equipment are fully insured against loss or damage and that all required insurance regarding such materials or equipment is in full force and effect.

11.9 TI's Representations Regarding Pay Requests: Each pay request shall be signed by TI and shall constitute TI's representation that the Design Services and the Work have progressed to the level for which payment is requested in accordance with the milestones or the Schedule of Values, that the Design Services and the Work have been properly installed or performed in strict

accordance with this Agreement, and that TI knows of no reason why payment should not be made as requested. The submission by TI of a pay request constitutes an affirmative representation and warranty that all Work for which payments have been received from Owner is free and clear of liens, claims, security interests or other encumbrances in favor of TI or any other person or entity whatsoever. In the event that Owner learns that any representations of TI as set in this Section are wholly or partially inaccurate, Owner may withhold payment of sums then or in the future otherwise due to TI until the inaccuracy, and the cause thereof, is corrected to Owner's reasonable satisfaction.

11.10 Owner's Review Of Pay Requests: Owner shall have the right to review all pay requests and the Design Services and the Work at the Project site or elsewhere to determine whether the quantity and quality of the Work and the Design Services is as represented in the pay request and as required by the Contract.

11.11 Conditions Precedent To Payment: In addition to all other conditions precedent contained herein, it shall be a condition precedent to payment of any pay request that TI have submitted updated schedules for the performance of its Work and Design Services as required by this Agreement and that TI shall have furnished to Owner properly executed waivers of lien, in a form acceptable to Owner, from all Subcontractors, material, men, suppliers or others having lien rights, wherein they shall acknowledge receipt of all sums due pursuant to all prior pay requests and waive and relinquish any liens or lien rights relating thereto.

11.12 Amount Of Progress Payments: Owner shall pay the amount of each pay request properly due under this Agreement less such amounts, if any, owing by TI to Owner or which Owner shall have the right to withhold as authorized by this Agreement.

11.13 Time For Payment: Subject to Owner's right of review and objection, Owner shall make payment on account of the Contract Price within forty five (45) days following the receipt of TI's pay requests.

11.14 Title Passes Upon Payment: TI warrants and represents that upon payment of any pay request submitted by TI, title to all Work covered by the pay request shall immediately pass to Owner.

11.15 TI's Use Of Progress Payments: Upon receipt of any payment from Owner, TI shall promptly pay all Subcontractors, material, men, laborers, and suppliers such amounts as they are entitled for the Work covered by such payment.

11.16 Use Of Joint Checks: If Owner becomes informed that TI has not paid subcontractors, materialmen, laborers, and suppliers as provided herein, Owner shall have the right, but not the duty, to issue checks and payment then or thereafter otherwise due to TI naming TI and any such subcontractors, material, men, laborers, and suppliers as joint payees. Such joint check procedure, if employed by Owner, shall create no rights in favor of any person or entity beyond the right of the named payees to payment of the check and shall not be deemed to commit Owner to repeat the procedure in the future nor to create any contractual or other relationship of any kind between Owner and such person or entity.

11.17 Payment Not A Waiver Or Acceptance: No payment to TI, nor any use or occupancy of the Project by Owner, shall be interpreted or construed to constitute acceptance of any Work not in strict compliance with the Contract, and TI expressly accepts the risk that defective Work may not be detected (1) during any inspection by Owner, (2) prior to making of any payment to TI, or (3) before Owner's occupancy of the Project.

11.18 Withholding Of Payment: Owner shall have the right to refuse to make payment and, if necessary, may demand the return of a portion or all of the amount previously paid to TI in an amount then believed by Owner to be adequate to cover the penalties, damages, and potential losses resulting or likely to result from:

- (1) The quality of a portion, or all, of TI's Work not being in accordance with the requirements of this Contract;
- (2) The quantity of TI's Work not being as represented in TI's pay request, or otherwise;
- (3) TI's rate of progress being such that, in Owner's opinion, Substantial Completion, Final Completion, or both, may be inexcusably delayed;
- (4) TI's failure to use Contract funds, previously paid TI by Owner, to pay TI's Project-related obligations including, but not limited to, Subcontractors, laborers and material and equipment Suppliers;
- (5) Evidence that the balance of the Work cannot be completed in accordance with the Contract for the unpaid balance of the Contract Price;
- (6) Claims made, or likely to be made, against Owner or its property;
- (7) Loss caused by TI;
- (8) TI's failure or refusal to perform any of its obligations to Owner.

In the event that Owner makes written demand upon TI for amounts previously paid by Owner as contemplated in this Section 11.17, TI shall promptly comply with such demand.

11.19 Unexcused Failure To Pay: If Owner, without cause or basis hereunder, fails to pay TI any amounts due and payable to TI within thirty (30) days after the date established herein for payment of such amounts, then TI may suspend its Design Services or, as applicable, the Work until payment is made, provided that TI first gives ten (10) days' written notice to Owner of its intent.

11.20 Payment contingent upon availability of appropriated funds or funds approved by Board of Regents: Any other provisions of the Contract Documents to the contrary notwithstanding, it is expressly understood and agreed that the legal obligation of the Owner to pay the Contract Sum of any part thereof shall be contingent upon the availability of funds appropriated by the Legislature of the State of Nebraska as provided by law, or the availability or other funds of the Owner specifically approved by formal action of the Board of Regents of the University of Nebraska for the purpose of payment of the Contract Sum or any part thereof. The appropriation, availability of funds, and the specific approval by formal action of the Board of Regents shall be conditions precedent to Owner's obligation to make any payment to Contractor for the Work.

ARTICLE 12

COMMISSIONING

12.1 **Commissioning:** TI shall be responsible for verifying and documenting the installation and performance of systems meet the needs of the Project. Commissioning will begin with program verification and continue through the first year of operation.

Commissioning will confirm:

- (1) All technology systems, subsystems, equipment, controls and components interface with each other, and other building systems are installed properly.

(2) A system complies with the contract and is within the scope of design and installation requirements.

(3) All technical-support personnel, faculty and staff are instructed properly to operate and maintain technology systems efficiently.

(4) All required training, manuals and documentation regarding the systems installed have been received.

12.2. Commissioning Plan Requirements: TI shall provide commissioning requirements with GMP which will include, but not be limited to, a commissioning plan prepared and submitted by the TI or subcontractor; a list of team members who will represent the TI or subcontractor in the functional performance testing; all checklist and test forms to be used; the testing schedule; training and education expectations; all warranties and guarantees by TI, subcontractors and manufacturers; and a final report containing all commissioning checklists and functional test reports.

12.3 Functional performance testing shall cover every item within the technology package. All hardware, software, wiring and interfaces shall be tested and evaluated to determine if they are consistent with performance data in the contract documents.

12.4 TI shall develop the project-specific Commissioning Plans, Pre-Functional Checklists, and Functional Performance Test procedures;

12.4 TI shall produce a spreadsheet itemization of all products and equipment that comprise the systems being commissioned, including governing specification section and location by room number or column lines;

12.5 TI shall conduct field visits and inspections, and provide oversight of technology installation.

12.6 TI shall modify, as needed, the project-specific Commissioning Plan to reflect changes made to systems and equipment during installation NOTE: Re-testing shall incur additional services to be payable directly by the TI.

12.7 TI shall document deficiencies and action items stemming from Functional Performance Tests, plus field inspection reports for observations.

12.8 TI shall recommend acceptance or rejection of systems and/or components based on Functional Performance Test results.

12.9 TI shall develop a project-specific "Systems Manual" for the Owner, comprised of the documents and elements outlined in the General Commissioning Requirements Specification;

12.10 TI shall produce and distribute Draft Commissioning Report at Substantial Completion;

12.11 TI shall consolidate and provide to Owner all Commissioning-related documents in searchable electronic (PDF) format, including narrative report(s), itemization of products and equipment comprising the systems being commissioned, checklists and field observation reports, results, deficiency log(s), and training-related documents.

12.12 TI shall develop and execute adequate training and orientation session(s) prior to Substantial Completion to review and explain the “as built” commissioned technology systems, general operation and maintenance of the commissioned systems, troubleshooting guidelines, emergency procedures and energy efficiency measures.

12.13 Post Occupancy Commissioning

- 1) TI shall make quarterly inspections and/or testing of commissioned technology systems through the one year warranty period.
- 2) The TI shall conduct interviews with Owner’s staff, plus reviews of occupant surveys, to confirm proper operation and maintenance and to discover or fully understand concerns and difficulties with commissioned technology systems;
- 3) TI shall track issues, discrepancies, and other problems with commissioned technology systems through resolution;
- 4) TI shall produce and distribute a Final Commissioning Report at the conclusion of the post-occupancy phase to document the results of commissioning.

ARTICLE 13

SUBSTANTIAL AND FINAL COMPLETION

13.1 Substantial Completion: “Substantial Completion” means that stage in the progression of the Work, as approved by Owner in writing, when the Project is sufficiently complete in accordance with the Contract that Owner can enjoy beneficial use or occupancy of the entire Project and can utilize it for all of its intended purposes. A condition precedent to Substantial Completion is the receipt by Owner of all necessary certificates of occupancy or other authorizations for the use and occupancy of the Project required by any governmental or regulatory authority. Owner reserves the right to occupy and use any part, phase or system of the Project when such part, phase or system is substantially completed, but such partial use or occupancy of the Project shall not result in the Project being deemed substantially complete, and such partial use or occupancy shall not be evidence of Substantial Completion.

13.2 Determination Of Substantial Completion: When TI believes that the Work is substantially complete, TI shall notify Owner in writing and shall submit to Owner a list of items remaining to be completed or corrected. Owner will perform an inspection and if the Work is substantially complete in the opinion of Owner, Owner will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion. The Certificate of Substantial Completion shall state the responsibilities of Owner and TI for Project security, maintenance, heat, utilities, damage to the Work, and insurance, and shall fix the date, 30 days hence, within which TI shall complete any items of incomplete or defective Work. The Certificate of Substantial Completion shall be submitted to TI for its written acceptance of the responsibilities assigned to it in such certificate.

13.3 Payment Upon Substantial Completion: Upon Substantial Completion of the Work, and upon execution by both Owner and TI of the Certificate of Substantial Completion, Owner shall pay TI, within forty five (45) days, all sums due TI, including retainage, less five percent (5%) of the reasonable costs as determined by Owner for completing all incomplete Work and Design Services, correcting and bringing into strict conformance all defective and nonconforming Work, and handling all outstanding or threatened claims.

13.4 Final Completion: "Final Completion" means the completion of all Design Services and all Work required by, and in strict compliance with, the Contract, including TI's provision to Owner of all documents and things required to be provided by the Contract.

13.5 Determination Of Final Completion: When TI believes that all of the Work is finally complete, and TI is ready for a final inspection, TI shall so notify Owner in writing. Owner will then make final inspection of the Work and, if the Work is complete in strict accordance with the Contract, and the Contract has been fully performed, then Owner will issue a Certificate for Final Payment, providing for payment of the remainder of the Contract Price, less any amount withheld pursuant to the Contract.

13.6 Payment After Final Completion: Owner shall make final payment of all sums due TI within thirty (30) days after Final Completion as reflected by Owner's Certificate for Final Payment, provided that all documents and things required to be delivered to Owner hereunder have been delivered as required, and provided that all other conditions precedent to payment have been satisfied.

13.7 Conditions Precedent To Final Payment: Prior to being entitled to receive final payment, and as a condition precedent thereto, TI shall furnish Owner, in the form and manner required by Owner, the following:

- (1) An affidavit that all of TI's obligations to Subcontractors, laborers, equipment or material Suppliers, or other third parties in connection with the Project, have been paid or otherwise satisfied, and receipt from the State of Nebraska, Department of Labor, Division of Employment From No. 16, Certificate of Contribution Status, certifying that TI and each of its Subcontractors have paid all contributions and interest due to and including the calendar quarter immediately preceding the date of Substantial Completion;
- (2) If required by Owner, separate releases of lien or lien waivers from each Subcontractor, lower tier subcontractor, laborer, Supplier or other person or entity who has, or might have a claim against Owner or Owner's property;
- (3) If applicable, consent(s) of surety to final payment;
- (4) A complete As-Built Building Information Model (BIM) utilizing AUTODESK REVIT 2014 software (See Exhibit C), and the record set of Field Modified/Noted Contract Documents.
- (5) All product warranties, operating manuals, instruction manuals and other record documents, drawings and things customarily required of a Contractor, or expressly required herein, as a part of or prior to Project closeout.

13.8 Acceptance Of Final Payment A Waiver: Acceptance by TI of final payment shall constitute a waiver and release of all claims against Owner by TI except for those claims previously made in writing against Owner by TI, pending at the time of final payment and specifically identified on TI's pay request for final payment as unsettled at the time it submits its pay request.

ARTICLE 14

OWNER'S DUTIES, OBLIGATIONS, AND RESPONSIBILITIES

In addition to payment, Owner shall undertake to perform the following:

14.1 Provide Project Information: Owner shall provide TI with information regarding Owner's requirements for the Project including any desired or required schedule.

14.2 Review Of Documents: Owner shall review any documents submitted by TI requiring Owner's decision, and shall render any required decisions pertaining thereto.

14.3 Provide Notice Of Defects: In the event Owner knows of any material fault or defect in the Work, nonconformance with the Contract, or of any errors, omissions or inconsistencies in the Design Documents, then Owner shall give prompt notice thereof in writing to TI.

14.4 Access To The Site And The Work: Owner shall provide TI access to the site and to the Work, and shall provide TI with such information, existing and reasonably available, necessary to TI's performance of the Contract as TI may request.

14.5 Cooperation To Secure Permits, Licenses, Approvals, And Authorizations: Owner shall cooperate with TI in securing any necessary licenses, permits, approvals or other necessary authorizations for the design, installation, commissioning and certification of the Project.

14.6 Timely Performance: Owner shall perform the duties set forth in this Article 13 in a reasonably expeditious fashion so as to permit the orderly and timely progress of TI's Design Services and of the Work.

14.7 Owner's Reviews, Inspections, Approvals, And Payments Not A Waiver: Owner's review, inspection, or approval of any Work, Design Documents, Submittals, or pay requests by TI shall be solely for the purpose of determining whether such Work and such documents are generally consistent with Owner's installation program and requirements. No review, inspection, or approval by Owner of such Work or documents shall relieve TI of its responsibility for the performance of its obligations under the Contract or the accuracy, adequacy, fitness, suitability, or coordination of its Design Services or the Work. Approval by any governmental or other regulatory agency or other governing body of any Work, Design Document, or Contract Documents shall not relieve TI of responsibility for the strict performance of its obligations under the Contract. Payment by Owner pursuant to the Contract shall not constitute a waiver of any of Owner's rights under the Contract or at law, and TI expressly accepts the risk that defects in its performance, if any, may not be discovered until after payment, including final payment, is made by Owner.

14.8 Delay Or Forbearance Not Waiver: Owner's agreement not to exercise, or its delay or failure to exercise, any right under the Contract or to require strict compliance with any obligation of TI under the Contract shall not be a waiver of the right to exercise such right or to insist on such compliance at any other time or on any other occasion.

14.9 Documents Requested By TI: Owner shall furnish to TI, prior to the execution of this Agreement, any and all written and tangible material knowingly in its possession concerning conditions below ground at the site of the Project. Such written and tangible material is furnished to TI only in order to make complete disclosure of such material and for no other purpose. By furnishing such material, Owner does not represent, warrant, or guarantee its accuracy or completeness either in whole or in part, and shall have no liability therefore. If TI requests in writing, Owner shall also furnish surveys, legal limitations, and utility locations (if known), and a legal description of the Project site.

14.10 Approvals And Easements: Owner shall obtain all easements required for installation, and shall pay for necessary assessments and charges required for use and occupancy of the Work. TI shall render such assistance as Owner may request in obtaining such easements, certificates of occupancy, and the like.

14.11 Right To Stop Work: In the event TI fails or refuses to perform the Work in strict accordance with the Contract, or is otherwise in breach of this Contract in any way, Owner may, at its option, instruct TI to cease and desist from performing further Work, or any part thereof. Upon receipt of such instruction from Owner in writing, TI shall immediately cease and desist as instructed by Owner

and shall not proceed further until the cause for Owner's instructions has been corrected, no longer exists, or Owner instructs that the Work may resume.

14.12 Owner's Right To Perform Work: In the event Owner issues such instructions to stop Work, and in the further event that TI fails and refuses within seven (7) days of receipt of same to provide adequate assurance to Owner that the cause of such instructions will be eliminated or corrected, then Owner shall have the right to carry out the Work with its own forces, or with the forces of other contractors, and TI shall be fully responsible for the costs incurred in performing such Work. The rights set forth in Section 13.11 and this Section 13.12 are in addition to, and without prejudice to, any other rights or remedies Owner may have against TI, including the rights to terminate or withhold payment as provided herein.

14.13 Owner's Representative: "Owner's Representative" means the individual named by Owner, in writing, to act on Owner's behalf in the administration of the Contract.

ARTICLE 15

PROJECT DOCUMENTATION

15.1 Maintenance Of Project-Related Records: TI shall maintain and protect all records relating in any manner whatsoever to the Project (the "Project Records") for no less than four (4) years after Final Completion of the Project, and for any longer period of time as may be required by law or good management practice.

15.2 Availability Of Project-Related Records To Owner: All Project Records which are in the possession of TI or TI's Subcontractors shall be made available to Owner for inspection and copying upon Owner's request at any time. Additionally, such records shall be made available upon request by Owner to any state, federal or other regulatory authorities and any such authority may review, inspect and copy such records. The Project Records include, without limitation, all drawings, plans, specifications, Submittals, correspondence, logs, minutes, memoranda, photographs, tape or videotape recordings, or other writings or things which document the Project, its design, or its installation. Said records include those documents reflecting the cost of design and installation to TI.

ARTICLE 16

PERSONNEL, SUBCONTRACTORS AND SUPPLIERS

16.1 Subcontractor Defined: A "Subcontractor" means an entity which has a direct contract with TI to perform a portion of the Work or the Design Services. For purposes of the Contract, Subcontractors shall also include those furnishing specially fabricated equipment and materials for the Project.

16.2 Supplier Defined: A "Supplier" means an entity providing only equipment or materials for the performance of the Work.

16.3 Objections To Subcontractors: Upon execution of this Agreement, and at such later times as may be applicable, TI shall furnish Owner, in writing, the names of persons or entities proposed by TI to act as Subcontractors on the Project. TI shall provide such information regarding such proposed Subcontractors as Owner deems necessary. Owner shall promptly reply to TI, in writing, stating any objections Owner may have to such proposed Subcontractors. TI shall not enter into a subcontract with an intended Subcontractor with reference to whom Owner objects. Any consent

or failure to reject by Owner shall in no way relieve TI of any of its duties or warranties under the Contract.

16.4 Terms Of Subcontracts: All subcontracts and purchase orders with Subcontractors shall afford TI rights against the Subcontractor which correspond to those rights afforded to Owner against TI herein, including those rights of Contract suspension, termination, and stop Work orders as set forth herein. It is expressly agreed that no relationship of agency, employment, contract, obligation or otherwise shall be created between Owner and any Subcontractor of TI and a provision to this effect shall be inserted into all agreements between TI and its Subcontractors.

16.5 TI Responsible For Acts Of Its Subcontractors: Should TI subcontract all or any part of the Work, such subcontracting of the Work shall not relieve TI from any liability or obligation under the Contract or under any applicable policy, law or regulation, and TI shall be responsible for all and any acts, defaults, omissions or negligence of its Subcontractors, Suppliers, and consultants.

16.6 Personnel: In accordance with Article 2 above, TI shall employ and assign only qualified and competent personnel to perform any service or task concerning the Project. TI shall designate one such person as the Project Manager. Absent written instruction from TI to the contrary, the Project Manager shall be deemed to be TI's authorized representative and shall be authorized to receive and accept any and all communications from Owner. Key design and supervisory personnel assigned by TI to this Project are as follows:

NAME

FUNCTION

Evidence of the above-named personnel's competence, such as a resume, shall be provided to Owner prior to said personnel beginning performance of the function indicated. So long as the individuals named above remain actively employed or retained by TI, or any related entity or affiliate thereof, they shall perform the functions indicated next to their names unless Owner agrees to the contrary in writing or unless Owner reasonably requests removal of any such individual from the Project. In the event Owner reasonably requests the removal of any of the individuals named above, TI shall immediately comply and shall immediately replace such individual with a qualified substitute to whom Owner makes no objection. In the event one or more individuals not listed above subsequently assumes one or more of those functions listed above, TI shall be bound by the provisions of this Section 15.6 as though such individuals had been listed above.

16.7 Removal Of Subcontractors And Personnel: If, at any time during the course of the Project, Owner reasonably determines that the performance of any Subcontractor or any member of TI's staff working on the Project is unsatisfactory, Owner's Representative may require TI to remove such Subcontractor or staff member from the Project immediately and replace the staff member at no cost or penalty to Owner for delays or inefficiencies the change may cause.

ARTICLE 17

CHANGES AND EXTENSIONS OF TIME

17.1 Owner's Right To Order Changes: Changes in the Design Services or the Work within the general scope of the Contract, consisting of additions, deletions, revisions or any combination thereof, may be ordered unilaterally by Owner without invalidating the Contract. Such changes shall be communicated by Change Order or by Field Order. TI shall proceed diligently with any changes,

and same shall be accomplished in strict accordance with the following terms and conditions as set forth in this Article 16.

17.2 Definition Of Change Order: "Change Order" shall mean a written order to TI executed by Owner, issued after execution of this Agreement, authorizing and directing a change in the Design Services or the Work, an adjustment to the Contract Price or the Contract Time, or any combination thereof. The Contract Price and the Contract Time may be changed only by Change Order.

17.3 Adjustments To Contract Price Or Contract Time: Upon the occurrence of a change as set forth in Section 17.1 the adjustment, if any, to the Contract Price or the Contract Time resulting from the change shall be determined as follows:

(1) By mutual agreement between Owner and TI as evidenced by (a) the change in the Contract Price, the Contract Time, or both, being set forth in a Change Order, (b) such change, together with any conditions or requirements relating thereto, being initialed by both parties, and (c) TI's execution of the Change Order; or

(2) If no mutual agreement occurs between Owner and TI, then the change in the Contract Price, if any, shall be established on the basis of, and shall be limited to, the reasonable expenditures or savings, as defined below, resulting from the change. Such reasonable expenditures or savings shall include a component for direct jobsite overhead and profit, but shall not include home office overhead or other indirect costs or components. Any such expenditures or savings shall be documented in such form and with such content and detail as Owner may require. Reasonable expenditures or savings shall be limited to the following:

(a) Actual, reasonable costs of Design Services, supervision, materials, supplies or equipment including delivery costs;

(b) Actual, reasonable costs of Design Services, supervision, labor, plus social security, unemployment insurance, fringe benefits required by agreement or custom, and worker's compensation insurance;

(c) Actual, reasonable rental costs of machinery and equipment (exclusive of small tools or hand tools) whether rented from TI or others;

(d) Actual, reasonable costs of premiums for bonds, permit fees, and sales, use or other taxes related to the Work.

In no event shall any expenditure or savings associated with TI's home office or indirect overhead expense be included in any Change Order.

(3) Any extension of the Contract Time requested by TI for performance of any change in the Design Services or the Work ordered by Owner may be granted by mutual agreement and then set forth in the Change Order. Otherwise, extensions of the Contract Time must be requested by TI pursuant to the terms and conditions of Article 17 of this Agreement, and any such request for extension of the Contract Time shall be subject to Section 17.7 of this Agreement. The failure of TI to provide notice in writing to Owner in accordance with Article 17 of this Agreement of any request for extension of the Contract Time shall constitute a waiver by TI of any entitlement to an extension of the Contract Time.

17.4 Continuing Duty To Perform Work And Make Payment: In the event the parties are unable to agree on the terms of a Change Order, then TI shall continue to diligently perform the Design Services and the Work, including any change directed by Owner by Change Order, and shall keep thorough records of the cost of performance of such Change Order consistent with and in accordance with the provisions of Section 17.3 above. Pending final determination of reasonable

expenditures or savings, payments on account shall be made to TI in accordance with said Section 16.3 and Article 11 herein.

17.5 Changes In Unit Prices: If unit prices are provided in the Contract, and if the quantities contemplated are changed in a proposed Change Order such that an application of the unit prices to the quantities of Work proposed will cause substantial inequity to Owner or to TI, the applicable unit prices shall be equitably adjusted.

17.6 Minor Changes: Owner shall have authority to order minor changes in the Work not involving a change in the Contract Price nor extension of the Contract Time and not inconsistent with the intent of the Contract. Such minor changes shall be made by written Field Order, and TI shall promptly carry out such written Field Orders.

17.7 Effect Of Executed Change Order: The execution of a Change Order by TI shall constitute conclusive evidence of TI's agreement to the ordered changes in the Design Services or the Work, the Contract as thus amended, the Contract Price as thus amended and the Contract Time as thus amended. TI, by executing the Change Order, waives and releases any claim against Owner for additional time or compensation for matters relating to, arising out of, or resulting from the Design Services or the Work included within or affected by the executed Change Order.

17.8 Consent Of Surety: TI shall notify and obtain the consent and approval of TI's surety with reference to all Change Orders if such notice, consent or approval are required by Owner, TI's surety or by law. TI's execution of the Change Order shall constitute TI's warranty to Owner that the surety has been notified of, and consents to, such Change Order and the surety shall be conclusively deemed to have been notified of such Change Order and to have expressly consented thereto.

17.9 Good Faith/Best Effort Relationship: TI recognizes and accepts a good faith/best effort relationship of trust and confidence hereby established between TI and Owner and agrees that it shall at all times in good faith use its best efforts to advance Owner's interests and agrees to perform the Design Services and the Work in the best professional manner.

ARTICLE 18

CLAIMS BY TI

18.1 Terms And Conditions Of Claims: Claims by TI against Owner are subject to the terms and conditions of this Article 17, and strict compliance herewith shall be a condition precedent to any liability of Owner therefore.

18.2 Notice Of Claim: All TI claims, disputes and other matters in question against Owner arising out of or related to the Contract or the breach thereof, including without limitation claims in respect of changes in the Contract Price or Contract Time, shall be initiated by a written notice of claim submitted to Owner. Such written notice of claim shall be received by Owner no later than seven (7) days after the event, or the first appearance of the circumstances, causing the claim, and same shall set forth in detail all known facts and circumstances supporting the claim including the amount claimed. TI agrees and acknowledges that its failure to provide written notice of a claim as set forth herein shall constitute a waiver of any claim for additional compensation or time extension related thereto.

18.3 Documentation In Support Of Claims: Upon discovering an event or condition forming the basis of a claim for an increase in the Contract Price or an extension of the Contract Time, TI shall, until the claim is resolved, commence to maintain separate records evidencing all costs and delays incurred in connection with the event or condition forming the basis for the claim.

18.4 Formal Written Claim: No later than thirty (30) days after the date of the written notice of claim, TI shall submit a formal written claim which shall include at least the following information:

(1) a concise statement of the occurrence(s) supporting the claim, dispute or other matter, and the relief sought; (2) identification of the facts giving rise to the claim dispute or other matter; (3) the date TI discovered the occurrence(s); (4) a detailed schedule of values identifying all costs resulting from the claim, dispute or other matter; (5) documentation supporting the schedule of values; (6) identification of any impact the claim, dispute or other matter has on the critical path schedule; and (7) all correspondence, internal memoranda, progress notes, and other documentation relating to the events which form the basis of the claim, dispute or other matter. Other information or documents shall be submitted to Owner within ten (10) days after written request by Owner. The failure to provide a claim as set forth herein, or the failure to provide such other documents or information requested by Owner within ten (10) days after the written request shall constitute a waiver of any claim for additional compensation or time extension related thereto.

18.5 Continuous Duty To Provide Documentation: TI shall provide, and continue to provide, to Owner all such documentation, including cost and time records, as and when Owner may request so that Owner may evaluate TI's claim.

18.6 Duty To Continue Performance: TI and Owner shall continue their performance hereunder regardless of the existence of any claims submitted by TI.

18.7 Differing Site Conditions: In the event TI discovers previously concealed and unknown site conditions which are materially at variance from those typically and ordinarily encountered in the general geographical location of the Project, and not reasonably discoverable by TI's diligent inspections as required herein, the Contract Price shall be modified, either upward or downward, upon the written claim made by either party within seven (7) calendar days after the first appearance to such party of the circumstances. As a condition precedent to Owner having any liability to TI due to concealed and unknown conditions, TI must give Owner written notice of, and an opportunity to observe, such condition prior to disturbing it. The failure of TI to give the written notice and make the claim as provided by this Section 18.7 shall constitute a waiver by TI of any rights arising out of or relating to such concealed and unknown condition including any claim for an increase in the Contract Price or any claim for an extension of the Contract Time.

18.8 Claims For Increase In Contract Price: In the event TI seeks to make a claim for an increase in the Contract Price, as a condition precedent to any liability of Owner therefore, TI shall strictly comply with the requirements of Section 18.2 above and such notice shall be given by TI before proceeding to execute any additional or changed Work. Failure of the condition precedent to occur shall constitute a waiver by TI of any claim for additional compensation.

18.9 Limit Of Owner's Liability For Increased Costs: In connection with any claim by TI against Owner for compensation in excess of the Contract Price, any liability of Owner (1) shall be strictly limited to direct cost actually and reasonably incurred by TI in accordance with the provisions regarding changes in the Contract Price as set forth in Subparagraph (2) of Section 17.3, and (2) shall in no event include, indirect, consequential, impact or other costs, expenses or damages of TI or its Subcontractors. Owner shall not be liable to TI for claims of third parties, including Subcontractors, for acts, omissions, events, or conditions for which Owner would not be liable to TI under the terms of the Contract. As a condition precedent to Owner's liability to TI for any loss or damage resulting from claims of third parties, including Subcontractors, such third parties must have complied with all conditions contained in their agreements with TI and such Subcontractor's claims must have been submitted to Owner by TI in strict compliance with all the requirements of this Article 18. Owner shall not be liable to TI for claims of third parties including Subcontractors, unless and until the liability of TI therefore has been established in a court of competent jurisdiction.

18.10 Claims For Increase In Contract Time: If TI is delayed in progressing any task which at the time of the delay is then critical or which during the delay becomes critical, as the sole result of any act or neglect to act by Owner or someone acting in Owner's behalf, or by changes ordered in the Design Services or the Work, unusually bad weather not reasonably anticipatable, fire or other Acts of God, then the date for achieving Substantial Completion, or, as applicable, Final Completion,

shall, subject to the provisions of Section 18.11 below, be appropriately adjusted by Owner upon the written notice and claim of TI to Owner for such reasonable time as Owner may determine. A task is critical within the meaning of this Section 18.10, if, and only if, said task is on the critical path of the Project schedule so that a delay in performing such task will delay the ultimate completion of the Project. As a condition precedent to any right to an extension of time, TI shall strictly comply with the requirements of Section 18.2 above and such notice shall be given by TI before proceeding to execute any additional or changed Design Services or Work. If TI fails to give such notice, any claim for an extension of time shall be waived. In the event the delay to TI is a continuing one, only one notice and claim for additional time shall be necessary, provided the continuing nature of the delay is indicated in the notice and claim.

18.11 Owner's Right To Order Acceleration And To Deny Claimed And Appropriate Time Extensions, In Whole Or In Part: TI acknowledges and agrees that Substantial Completion of the Work by or before the Scheduled Completion Date is, or may be, of substantial importance to Owner.

(1) Owner shall accordingly have the right in its sole discretion to order TI to accelerate its progress in such a manner as to achieve Substantial Completion on or before such date as Owner may reasonably direct and, upon receipt, TI shall comply with such order.

(2) In the event that TI is otherwise entitled to an extension of Contract Time and has made claim therefore in accordance with Section 17.10 above, Owner shall have the right in its sole discretion to deny all, or any part, of such extension of Contract Time by written notice to TI provided within seven (7) days of receipt of TI's claim. Should Owner deny TI's claim for an extension of Contract Time under this Subparagraph (2), either in whole or in part, TI shall proceed to prosecute the Work in such a manner as to achieve Substantial Completion on or before the then existing Scheduled Completion Date.

(3) In the event that (a) Owner orders TI to accelerate its progress under Subparagraph (1) of this Section 17.11, or (b) Owner exercises its rights under Subparagraph (2) of this Section 17.11, above, or (c) both, such action shall be deemed to constitute a Change Order under Article 17 and any change in the Contract Price shall be determined in accordance therewith.

18.12 Claims Resolved By Change Order: The resolution of any claim under this Article 17 shall be reflected by a Change Order executed by Owner and TI.

ARTICLE 19

UNCOVERING AND CORRECTING WORK

19.1 TI Not To Cover Work Contrary To Requirements: If any of the Work is covered, concealed or obscured contrary to the written request of Owner, or contrary to any provision of the Contract, said Work shall, if required by Owner, be uncovered for inspection and shall be properly replaced at TI's expense without change in the Contract Time.

19.2 Owner's Right To Order Uncovering Of Any Work: If any of the Work is covered, concealed or obscured in a manner not inconsistent with Section 19.1 above, it shall, if required by Owner, be uncovered for inspection. If such Work conforms strictly with the Contract, the cost of uncovering and proper replacement shall by Change Order be charged to Owner. If such Work does not strictly conform with the Contract, TI shall pay the cost of uncovering and proper replacement.

19.3 Duty To Correct Rejected Work: TI shall immediately proceed to correct Work rejected by Owner as defective or failing to conform to the Contract. TI shall pay all costs and expenses associated with correcting such rejected Work, including any additional testing and inspections made necessary thereby.

19.4 Duty To Correct Defective Work Discovered After Completion: In addition to its warranty obligations set forth elsewhere herein, TI shall be specifically obligated to correct any and all defective or nonconforming Work for a period of twelve (12) months following Final Completion upon written direction from Owner. This obligation shall survive final payment by Owner and termination of the Contract.

19.5 No Period Of Limitation Established: Nothing contained in Section 19.4 shall establish any period of limitation with respect to other obligations which TI has under the Contract. Establishment of the one-year time period in Section 18.4 above relates only to the duty to TI to specifically correct the Work.

19.6 Owner's Option To Accept Defective Work: Owner may, but shall in no event be required to, choose to accept defective or nonconforming Work. In such event, the Contract Price shall be reduced by the reasonable costs of removing and correcting the defective or nonconforming Work. Owner shall be entitled to such reduction in the Contract Price regardless of whether Owner has, in fact, removed and corrected such defective Work. If the unpaid balance of the Contract Price, if any, is insufficient to compensate Owner for the acceptance of defective or nonconforming Work, TI shall, upon written demand from Owner, pay Owner such additional compensation for accepting defective or nonconforming Work.

ARTICLE 20

SUSPENSION AND TERMINATION

20.1 Suspension Of Performance: Owner may for any reason whatsoever suspend performance under the Contract. Owner shall give written notice of such suspension to TI specifying when such suspension is to become effective.

20.2 Ceasing Performance Upon Suspension: From and upon the effective date of any suspension ordered by Owner, TI shall incur no further expense or obligations in connection with the Contract, and TI shall cease its performance. TI shall also, at Owner's direction, either suspend or assign to Owner any of its open or outstanding subcontracts or purchase orders.

20.3 Claim For Costs Of Suspension: In the event Owner directs a suspension of performance under this Article 20, through no fault of TI, and provided TI submits a proper claim as provided in this Agreement, Owner shall pay TI as full compensation for such suspension TI's reasonable costs, actually incurred and paid, of:

- (1) Demobilization and remobilization, including such costs paid to Subcontractors;
- (2) Preserving and protecting Work in place;
- (3) Storage of materials or equipment purchased for the Project, including insurance thereon;
- (4) Performing in a later, or during a longer, time frame than that contemplated by this Contract.

20.4 Resumption Of Work After Suspension: If Owner lifts the suspension it shall do so in writing, and TI shall promptly resume performance of the Contract unless, prior to receiving the notice to resume, TI has exercised its right of termination as provided herein.

20.5 Termination By TI For Prolonged Suspension Of Performance: If performance of this Contract is stopped for a period of ninety (90) consecutive days at the direction of Owner pursuant to Section 20.1 or by an order of any court or other public authority, or as a result of any act of the Government, and provided that such suspension by Owner or public authority is through no fault of

TI or any person or entity working directly or indirectly for TI, TI may, upon ten (10) days' written notice to Owner, terminate performance under the Contract and recover from Owner on the terms and conditions and in the amounts provided in Section 20.8 below.

20.6 Termination By TI For Cause: If Owner shall persistently or repeatedly fail to perform any material obligation to TI for a period of thirty (30) days after receiving written notice from TI of its intent to terminate hereunder, TI may terminate performance under the Contract by written notice to Owner. In such event, TI shall be entitled to recover from Owner on the terms and conditions and in the amounts as though Owner had terminated TI's performance under the Contract for convenience pursuant to Section 19.7 below.

20.7 Termination By Owner For Convenience: Owner may, for any reason whatsoever, or without reason, terminate performance under the Contract by TI for convenience. Owner shall give written notice of such termination to TI specifying when termination becomes effective. TI shall incur no further obligations in connection with the Contract and TI shall stop Design Services and the Work when such termination becomes effective. TI shall also, at Owner's direction, either terminate or assign to Owner outstanding orders and subcontracts. TI shall settle the liabilities and claims arising out of any terminated subcontracts and orders. Owner may direct TI to assign TI's right, title and interest under terminated orders or subcontracts to Owner or its designee. TI shall transfer title and deliver to Owner such completed or partially completed Design Documents, Work and materials, equipment, parts, fixtures, information and Contract rights as TI has.

20.8 Submission Of Termination Claim And Compensation For Termination For Convenience: When terminated for convenience, TI shall be compensated as follows:

- (1) TI shall submit a termination claim to Owner specifying the amounts believed to be due because of the termination for convenience together with costs, pricing or other data required by Owner. If TI fails to file a termination claim within three (3) months from the effective date of termination, Owner shall pay TI an amount derived in accordance with Subparagraph (3) below;
- (2) Owner and TI may agree to the compensation, if any, due to TI hereunder;
- (3) Absent agreement to the amount due to TI, Owner shall pay TI, as full compensation for termination for convenience, the following amounts:
 - (a) That portion of the Contract Price representing the value of the Design Services and the Work, as reflected on the Schedule of Values, performed by TI prior to its receipt of the notice of termination, which is completed and accepted by Owner for which TI has not been previously paid;
 - (b) Reasonable costs incurred in preparing to perform and in performing the terminated portion of the Design Services and the Work, and in terminating TI's performance, plus a fair and reasonable allowance for direct jobsite overhead and profit thereon (such profit shall not include anticipated profit or consequential damages); provided however, that if it appears that TI would have not profited or would have sustained a loss if the entire Contract would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss, if any;
 - (c) Reasonable costs of settling and paying claims arising out of the termination of subcontracts or orders pursuant to Section 19.7 above. These costs shall not include amounts paid in accordance with other provisions hereof.

In no event shall TI be entitled to recover anticipated profits or other consequential damages from Owner on account of a termination for convenience or an erroneous termination for cause, as

described below. The total sum to be paid TI under this Section shall not exceed the Contract Price, as properly adjusted, reduced by the amount of payments otherwise made, and shall in no event include duplication of payment.

20.9 Termination By Owner For Cause: If TI does not perform the Work, or any part thereof, in a timely manner, supply adequate labor, supervisory personnel or proper equipment or materials, or if it fails to timely discharge its obligations for labor, equipment and materials, or proceeds to disobey applicable laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, or otherwise commits a violation of a material provision of the Contract, then Owner may by written notice to TI, without prejudice to any other right or remedy against TI or others, terminate the performance of TI and take possession of the Project site and of all materials and equipment at the site and may finish the Work by whatever methods it may deem expedient. In such cases, TI shall not be entitled to receive any further payment until the Work is finished.

20.10 Erroneous Termination For Cause: In the event the employment of TI is terminated by Owner for cause pursuant to Section 20.9, and it is subsequently determined by a court or other tribunal of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a Termination for Convenience under Section 20.7 and the provisions of Section 20.8 regarding compensation shall apply.

20.11 Payments To TI or Owner After Termination For Cause: If the unpaid balance of the Contract Price exceeds the costs of finishing the Work, including compensation for Owner's additional costs and expenses of every nature whatsoever made necessary thereby, such excess shall be paid to TI. If such costs exceed the unpaid balance, TI shall pay the difference to Owner. The TI shall be liable to the Owner for all costs and expenses, including reasonable attorney's fees, incurred by Owner to enforce the provisions of this Section 20.11. This obligation for payment shall survive the termination of the Agreement.

ARTICLE 21

OWNERSHIP OF DOCUMENTS

21.1 Documents Owner's Property: The Design Documents and the Contract Documents, including but not limited to, the drawings, specifications and other documents or things prepared by TI for the Project, shall immediately become and be the sole property of Owner. Any documents furnished by Owner shall remain the property of Owner. TI may be permitted to retain copies of the Design Documents and Contract Documents and any documents furnished by Owner for its records with approval in writing of Owner; provided, however, that in no event shall TI use, or permit to be used, any portion of all of such documents on other projects without Owner's prior written authorization.

ARTICLE 22

INDEMNITY

22.1 From Personal Injury Or Damage To Tangible Property: TI shall indemnify and hold Owner harmless from any and all claims, liability, damages, loss, cost and expense of every type whatsoever including, without limitation, attorneys' fees and expenses, in connection with TI's performance of this Contract, provided that such claims, liability, damage, loss, cost or expense is due to sickness, personal injury, disease or death, or to loss or destruction of tangible property (other than the Work itself), including loss of use resulting therefrom, to the extent caused by TI or anyone for whose acts TI may be liable, regardless of whether such liability, claim, damage, loss, cost or expense is caused in part by Owner.

22.2 From Violations Of Laws, Environmental Requirements, Performance Guidelines, And Licensing Requirements: TI shall indemnify and hold harmless Owner and its affiliates, officers,

directors, and employees from and against all claims, liabilities, damages, losses, costs, expenses (including reasonable attorney's fees and expenses, and fees and expenses of experts) for bodily injury, including death, or damage to or loss of property, or any other type or form of loss occurring or sustained or resulting from:

- (1) Any violation by TI, its Subcontractors, representatives, employees, and agents of any municipal, state or federal laws, rules, or regulations applicable to the performance of its obligations under the Contract;
- (2) Environmental violations or contamination from hazardous substances, hazardous wastes and emissions or other substances or chemicals regulated by any applicable environmental laws or regulations and resulting from any willful misconduct, negligent act or omission, or legal violation by TI, its Subcontractors, Suppliers, representatives, employees, or agents;
- (3) The failure of any of TI's employees, agents, representatives, Suppliers, or Subcontractors to obtain and maintain the required skills, licenses, certificates and permits mandated by applicable federal, state or local governing authorities with jurisdiction over installation, fabrication, environmental, health and safety matters or the Project.

22.3 Hazardous Materials: In the event TI discovers hazardous or contaminated materials, including but not limited to asbestos, PCBs, petroleum, hazardous waste, or radioactive material, TI shall stop all Work in connection with such hazardous condition and in any area affected thereby, and notify Owner of the discovery of said condition. TI shall strictly comply with all applicable laws, regulations, rules or other promulgations by governing bodies, agencies, authorities or organizations having jurisdiction over the Project or the discovery of said hazardous or contaminated material. TI shall secure the Work site to prevent access by unauthorized personnel. If TI fails to comply with this Section 22.3 or contaminated, hazardous or suspected contaminated or hazardous material is transported (either on or off site) without notice to Owner, such materials shall become the property of TI and TI shall be solely responsible for all costs and fines associated therewith.

ARTICLE 23

INSURANCE

23.1 Builders Risk. The Owner will provide and maintain Builders Risk insurance for the structure or buildings while under installation, erection or fabrication as shown and described in the Contract Documents.

23.1.1 Builder's Risk Policy Limits

		Policy Limits
		<u>Shared by All Insureds</u>
Specified Location:	All Risk Perils	Replacement Cost of
Annual Aggregates:	Flood	the work or adequate
	Earthquake	loss limit to cover
Transit & Off-Site Storage		physical loss or damage to the work
.1	Coverage does not extend to any owned, leased or rented property or any installation type equipment, machinery or supplies used for installation and not intended to form a permanent part of the work.	
.2	Deductible to TI and subcontractors not to exceed \$1,000 per occurrence	
.3	90 Day notice of cancellation	
.4	Debris removal/demolition	
.5	Blanket waiver of subrogation against all insureds (including design professionals)	
.6	Boiler and Machinery Insurance. The Owner shall purchase and maintain boiler and machinery insurance which shall specifically cover such insured objects during	

installation until final acceptance by the Owner. This insurance shall include interest of the Owner, TI, Subcontractors, and Sub-subcontractors in the Work, and the Board of Regents of the University of Nebraska.

23.1.2 A loss insured under the Owner's builder's risk insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds as their interest may appear, subject to any applicable mortgagee clause and subject to Subsection 23.2.9. The TI shall pay Subcontractors their just shares of insurance receipts received by the TI, and by appropriate agreements, written or legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

23.1.3 Partial occupancy or use of the Project shall not commence until the insurance company or companies providing builder's risk insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the TI shall take reasonable steps to obtain consent of the insurance company, or companies and shall without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or a reduction of insurance.

23.2 Insurance Furnished By TI And Subcontractors. Except as otherwise provided, the TI and subcontractors shall maintain, at their own expense, the following minimum insurance coverages on policy forms and with insurers acceptable to the Owner:

23.2.1 Automobile Liability Insurance. \$1,000,000 Combined Single Limit for Bodily Injury and Property Damage per occurrence for owned, non-owned and hired vehicles.

23.2.2 Workers' Compensation and Employer's Liability Insurance for Off-Site Activities. The TI and its Subcontractors will procure and provide the following Workers' Compensation coverage at their own expense with respect to operations not conducted at the Project Site. This Workers' Compensation coverage shall include a waiver of subrogation in favor of the Owner as it relates to the Work for this Project.

Nebraska Statutory Limits with All States Endorsement

\$1,000,000	Each Accident - Bodily Injury by Accident
\$1,000,000	Policy Limit - Bodily Injury by Disease
\$1,000,000	Each Disease - Bodily Injury by Disease
\$1,000,000	Employer' Liability

23.2.3 Commercial General Liability Insurance for Off-Site Activities. \$2,000,000 Combined Single Limit for Bodily Injury and Property Damage per occurrence or \$1,000,000 Bodily Injury and \$1,000,000 Property Damage. Coverage must include Broad Form Contractual, Broad Form Property Damage, Personal Injury, Premises-Operations, Products-Completed Operations, Independent Contractors and Subcontractors, Fire Legal Liability, and when indicated, coverages for XCU. The Owner and its agents shall be included as additional insureds under these policies. Prior to commencement of Work, the TI shall provide the Owner with a Certificate of Insurance showing coverages in compliance with this Subsection.

23.2.4 Other Insurance. Insurance other than insurance provided by the Builders Risk as the TI or subcontractors may carry with respect to their operations and/or property, shall be at their own expense and risk. By way of illustration such types of coverage may include Contractors Equipment Floater, Aircraft and Watercraft Liability, Railroad Protective Liability, and other insurance as needed or deemed appropriate.

23.2.5 Triplicate Original Certificates of Insurance shall be filed with the TI prior to commencement of the Work for coverages provided in 23.3. These certificates shall contain

a provision that coverage as 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 TI.

23.3 Waiver of Subrogation. Each party shall waive all rights of subrogation against the other, its agents, and any of its insurers as regards any loss covered by insurance, regardless of whether this insurance be Owner-Furnished, TI-Furnished, Subcontractor-Furnished, or other insurance the TI or Subcontractor carries for his or her own account. This waiver shall apply to the insurers of each party hereto and of any subcontractor.

ARTICLE 24

SURETY BONDS

24.1 Performance Bond And Payment Bond: TI shall furnish separate performance and payment bonds to Owner. Each bond shall set forth a penal sum in an amount not less than the Contract Price. Each bond furnished by TI shall incorporate by reference the terms of the Contract as fully as though they were set forth verbatim in such bonds. In the event the Contract Price is adjusted by Change Order executed by TI, the penal sum of both the performance bond and the payment bond shall be deemed increased by like amount. The performance and payment bonds furnished by TI shall be in form suitable to Owner and shall be executed by a surety, or sureties, reasonably acceptable to Owner and authorized to do business in the State of Nebraska.

ARTICLE 25

MISCELLANEOUS PROVISIONS

25.1 Governing Law: The Contract shall be governed by the laws of the State of Nebraska.

25.2 Compliance With Nebraska Fair Employment Practices Act: TI and Design/ Builder's Subcontractors shall not discriminate against any employee or applicant for employment, to be employed in the performance of the Contract or any subcontract for the Project, with respect to his or her tenure, terms, conditions, or privileges of employment, because of his or her race, color, religion, gender, disability, or national origin. TI shall include the forgoing provisions of this Section 25.2 in each subcontract for the Project.

25.3 Successors And Assigns: Owner and TI bind themselves, their successors, assigns, executors, administrators and other legal representatives to the other party hereto and to successors, assigns, executors, administrators and other legal representatives of such other party in respect to all terms and conditions of this Contract.

25.4 Non-Assignment: TI shall not assign the Contract, or any part of the Contract, without prior written consent of Owner.

25.5 Notices: Any notice required to be given herein shall be deemed to have been given to the other party if (1) given by first class mail, registered or express mail, courier service, or hand delivery; or (2) by telex or fax, provided that such notice is also confirmed by first class mail, registered or express mail, courier service, or hand delivery to the following addresses:

To Owner:

Project Manager
University of Nebraska

Facilities Management Department
Address _____
City, State, Zip Code _____

To TI:

All notices shall be effective upon receipt.

25.6 Publicity: No information relative to the existence or the details of the Design Services or the Work shall be released by TI, either before or after completion of the Project, for publication, advertising or any commercial purposes without Owner's prior written consent.

25.7 Severability: In the event that any portion or any portions of this Contract are held to be unenforceable by a court of competent jurisdiction, then the remainder of this Contract shall be enforced as though such portions had not been included, unless to do so would cause this Contract to fail of its essential purposes.

Executed by the parties' duly authorized representatives as indicated by their signatures below.

**THE BOARD OF REGENTS OF THE
UNIVERSITY OF NEBRASKA, Owner**

Technology Integrator

By: _____
(Signature)

By: _____
(Signature)

(Printed Name)

(Printed Name)

(Title)

(Title & Address)

(Date of Execution)

(Date of Execution)

ACKNOWLEDGMENTS

State of _____)
) ss. (Corporation) or (Partnership) or
 (Individual)
County of _____)

Before the undersigned, a Notary Public duly qualified in and for said, county and state, personally came

_____ the _____ of _____
, a corporation authorized to do business in the State of Nebraska, and known to be the said officer of said corporation, and the same and identical persons who signed the foregoing Agreement as said officers, and each acknowledge their signing of this Agreement to be their duly authorized act and deed as such officers on behalf of said corporation.

Subscribed and sworn to before me this _____ day of _____, 20____.

Notary Public

State of Nebraska _____)
) ss. (Board of Regents)
County of _____)

Before the undersigned, a Notary Public duly qualified in and for said county and state, personally came

_____ the _____ for
the Board of Regents of the University of Nebraska, and known to me to be the said officer of said public corporation, and the same and identical persons who signed the foregoing Agreement as said officer, and each acknowledged their signing of this Agreement to be their duly authorized act and deed as such officer on behalf of said public corporation.

Subscribed and sworn to before me this _____ day of _____, 20____.

Notary Public

CERTIFIED COPY OF RESOLUTION

BE IT RESOLVED, that the following named individuals, and each of them, are hereby authorized as employees _____ of _____ to execute in its behalf all contracts, agreements and releases which they, in their discretion, approve, each such

employee being separately and independently authorized to so act without the concurrence or joinder in such action by and of the other named employees:

BE IT FURTHER RESOLVED, that any such contract, agreement or release executed by any of the above-name employees in the name of _____ should be considered a contract, agreement, or release of _____ and shall be binding upon it.

BE IT FURTHER RESOLVED, that any similar authority heretofore granted by the Board of Directors of the Company to employees other than those named above be and hereby is terminated as of this date, and the authority granted above shall commence this date and shall continue until revoked by resolution of the Board of Directors.

I hereby certify that I am Secretary of _____, that as such I have access to the books and records of the Corporation; that the foregoing is an excerpt from the minutes of the Board of Directors' Meeting of _____ a Nebraska Corporation, held on the _____ day of _____, 20____, a quorum being present; and that no action has been taken by the Board of Directors of said Corporation since said date that would have effect of changing or altering the authority granted therein.

Subscribed and sworn to before me this _____ day of _____, 2009.

Notary Public

Secretary of the Corporation

Seal:

Date _____

EXHIBIT A

REQUEST FOR PROPOSAL



**REQUEST FOR PROPOSALS
TECHNOLOGY INTEGRATOR
PRE-INSTALLATION, INSTALLATION
& COMMISSIONING SERVICES**

DATE ISSUED: November 30, 2015

THE NEBRASKA BOARD OF REGENTS

for and on behalf of

UNIVERSITY of NEBRASKA MEDICAL CENTER (UNMC)

REQUEST PROPOSALS FOR:

**GLOBAL CENTER FOR ADVANCED INTERPROFESSIONAL LEARNING BUILDING
P-15050**

DUE DATE/ TIME: Thursday December 17, 2015 BY 2:00 PM CST

Deadline for Inquiries
Time and Date Set for Submittal

Thursday December 10, 2015
Thursday December 17, 2015

**REQUEST FOR PROPOSALS (RFPs)
FOR
TECHNOLOGY INTEGRATOR**

GLOBAL CENTER FOR ADVANCED INTERPROFESSIONAL LEARNING BUILDING

INFORMATION AND INSTRUCTIONS TO CONTRACTORS

1 GENERAL INFORMATION

- 1.1 The University of Nebraska intends to procure a qualified Technology Integrator (TI) for the technology integration of multiple highly complex 3D, virtual immersive reality (VIR), holographic, audio/visual, information technology components, advanced simulation technology, network communications and surgical skills technology for the Global Center for Advanced Interprofessional Learning Building (Project) to be constructed on the midtown campus of the University of Nebraska Medical Center in Omaha, Nebraska. The project will provide a new multi-level structure of approximately 134,000 square feet to support the activities of the iEXCELSM and 56,000 square feet of structured parking (about 120 stalls) below the building for a total area of 190,000 square feet.

The TI will be responsible for the program validation, equipment selection, systems-level design, procurement, installation, and commissioning of the technologies listed above to create realistic environments for both individual and interprofessional learning and have tele-education, telepresence (visualization) and tele-health networking capabilities. The TI will also be responsible to prepare the building and technology so that communication occurs between each room, each floor and from the Project to other buildings across the state.

The estimated technology cost is \$24,000,000.

- 1.2 The Statement of Qualifications (SOQ) must be submitted electronically via email, and received by UNMC Facilities Management and Planning at craig.ellis@unmc.edu , by Thursday December 17, 2015, 2:00 PM CST
- 1.3 Questions pertaining to the selection process should be directed to Craig P. Ellis, AIA, UNMC Facilities Management and Planning at craig.ellis@unmc.edu. Questions must be received prior to 1:00 PM CST on Thursday December 10, 2015.
- 1.4 The University of Nebraska shall not be held responsible for any oral instructions. Any changes to this Request for Proposals (RFP) will be in the form of an addendum, which will be furnished to all registered RFP holders by posting on the UNMC Facilities website at www.unmc.edu/facilities.
- 1.5 The University of Nebraska reserves the right to reject any or all SOQs, to waive any informality or irregularity in any SOQ received, and to be the sole judge of the merits of the respective SOQs received.
- 1.6 The Project description is:

The Owner's team has developed a unique and innovative proposal to seamlessly amalgamate

otherwise disarticulated technologies into a new paradigm of teaching. But, as with all visionary ideas, the execution and integration of the plan will require a partner that has a multidisciplinary skill-set and approach to technology integration and has experience globally. There must be a demonstrated willingness to “sit at the table” to collaborate with members of the design and engineering team, stakeholders, which include administrative leadership, purchasing, end users and information technology support staff during the selection and integration of technologies. The goal is to select an organization whose culture will be compatible (i.e. customer driven, responsive, innovative); and an organization that understands the project sustainability goals and responsive to assisting with these goals (i.e., supports roundtable, innovation awards, and R&D). An organization that understands that their success is tied to your success. This also includes the willingness to work with Owner’s in the development and assurance of achieving project measures of success.

The Owner is seeking a TI that has specific experience with incorporating Advanced Visualization including 3D / Virtual Immersive Reality and holographic technologies, as used in education, healthcare, manufacturing, aviation, automobile, oil and gas, and entertainment industries, and military simulation. Experience with the integration of other vendors (simulation technology, including simulation capture systems and storage and surgical visualization – for example) will be critical to the success of the program.

Another area of experience that will be highly regarded is experience with Audio Visual solutions and Video Conferencing integration which includes network design and other unified communication expertise. Sufficient bandwidth to allow remote connectivity and broadcasting to and from the sites (with little to no delay) at this level will require significant expertise, especially if the data to be transmitted is highly visual.

Another key area will be empirical engineering knowledge for designs in intraoperative surgical suites, specialized procedure rooms, interactive medical collaboration, clinical audio video networks, monitored care and tele-health presentation systems are also a plus. Designing sufficient bandwidth (with little to no delay) to allow remote connectivity and broadcasting to and from multiple sites is critical.

Additionally, specific experience with benefits that can be derived from Digital Media solutions such as those used for executive communications, digital signage, student and public interaction or safety and security alerts.

It is critically important that all technologies incorporated are viewed in total and not as individual “systems within a system” and whenever possible, the technologies must be compatible and interconnected.

TI to have knowledge and experience in the design and integration of advanced educational technologies involved in the creation of comprehensive simulation and experiential learning center that includes:

- Computer based simulations
- E-learning - mobile and other devices
- Capabilities for pre and post testing of competencies
- Human patient simulators
- Simulation capture systems
- Electronic portfolios
- Visualization – including 3D and Virtual Immersive Reality (VIR)

- Holographic technology – including tele-presence
- Web-based clinical diagnostic programs
- Integration of the simulation technologies
- Remote access capabilities

The ultimate goal is to ensure that all the technology is interconnected thereby incorporating the latest trends in next generation of clinical simulation centers and technology. A technical team will preferably offer a skill mix of network, communication and collaboration solutions and have the ability to offer an end-to-end support model.

- 1.7 The TI services will be performed in two phases with two separate contracts. Phase I and the first contract will include the pre-installation services and the preparation and submission of the Guaranteed Maximum Price (GMP). Phase II and the second contract will include complete installation and commissioning services for the Project.
- 1.8 The TI will be selected on the basis of demonstrated competence and qualification for the type of services required with price as a factor, and thereafter the University will negotiate a contract for the pre-installation services at a fair and reasonable fee with the firm evaluated to provide the best value to the University.
- 1.9 The TI will be an integral member of the Project Team, consisting of the TI, representatives from the University, the Architect, Building Contractor, key design assist subcontractors and other consultants as required. Generally, it will be the responsibility of the TI to integrate the design and installation phases, utilizing skills and knowledge of design and general contracting, to provide designs, value engineering and constructability reviews, develop schedules; prepare detailed project installation estimates; study labor conditions; and, in any other way deemed necessary, to contribute to the development of the Project during the pre-installation/design phase.

The TI must understand the project's sustainability goals and be responsive to assisting with these goals. Generally, it will be the responsibility of the TI to integrate the design and installation of multiple systems supplied by multiple vendors utilizing skills and knowledge of design and general contracting, to work collaboratively with the Project Team to provide design, code analysis, value engineering and constructability reviews, develop schedules; prepare detailed project installation estimates; and, in any other way deemed necessary, to contribute to the development of the Project during the pre-installation/design phase

- 1.10 The TI assumes installation risk and has direct authority over the technology subcontractors. The TI will act as the University's fiduciary and have a relationship of trust and confidence between itself and the University. The Project will be an "open book" job whereby the University may attend any and all meetings of the TI firm relating to the Project and have access to any and all books and records of the TI relating to the Project.

2 - ANTICIPATED SCOPE OF WORK

- 2.1 After being selected, the TI will execute a contract with the University to provide pre-installation services of program validation, equipment selection, systems-level design and procurement during the design phase of the project as follows:
- 2.1.1 TI will be a part of the Project Design Team and participate with the University staff and the Architect during Project development. Participation may include leadership and overall

team coordination.

- 2.1.2 TI will provide Interdisciplinary Coordination
 - 2.1.3 TI will review of Codes and Standards
 - 2.1.4 TI will test and validate the Program Statement
 - 2.1.5 TI will Identify Opportunities for Economy
 - 2.1.6 TI will Identify and Coordinate Facilities Tours
 - 2.1.7 TI will provide value analysis services, value engineering and offer cost savings suggestions and best value recommendations.
 - 2.1.8 TI will provide technology planning and scheduling.
 - 2.1.9 TI will provide systems-level design and technology selection
 - 2.1.910 TI will provide constructability studies and reviews.
 - 2.1.11 TI will provide installation cost models, estimates based on marketplace conditions, and cash flow development and analysis.
 - 2.1.12 TI may be requested to manage a technology subcontractor design assist process during the pre-installation phase.
 - 2.1.13 TI will assist in the coordination of Contract Documents
 - 2.1.14 TI will coordinate with Architect/Engineer and Building Contractor
 - 2.1.15 At the completion of the design or at any earlier time as required by the University, TI will submit a Guaranteed Maximum Price (GMP) to the University.
- 2.2 After TI has submitted a GMP acceptable to the University, TI and University intend to execute a second contract for complete installation services for the installation of the project. The TI will assume the risk of delivering the Project through a guaranteed maximum price contract. The TI will be responsible for installation means and methods technology procurement and commissioning of the technology equipment.

3 - STATEMENT OF QUALIFICATIONS SELECTION CRITERIA

- 3.1 The TI will be selected through a qualification-based selection process.

Firms interested in providing technology integration services must submit a Statement of Qualifications (SOQ) that addresses the following evaluation criteria. Applicants are encouraged to organize their submissions in such a way as to follow the general evaluation criteria listed below. Information included within the SOQ may be used to evaluate your firm as part of any criteria regardless of where that information is found within the SOQ. Information obtained from the SOQ and from any other relevant source may be used in the evaluation and selection process.

3.2 Cover Letter (1-page) containing at a minimum:

Company name, contact name, address, fax number, and email address

3.3 Technical Qualifications Criteria

3.3.1 **General Information**

Description of firm/team

Legal company organization; organization chart with names

List of applicable Nebraska licenses

3.3.2 **Relevant Firm Experience**

(20 points)

- a. Applicant's overall reputation, service capabilities and quality as it relates to this project.
- b. List and briefly describe 3-5 comparable projects completed by your firm or currently in progress; include your firm's role, and discuss contract amendment history, if applicable. For each project, include: contract value and installation value (original value plus contract amendments, if applicable), project owner, project location, contact name and title, address, current/accurate telephone number, fax number, and email address (if available).
- c. A minimum of three referrals and references from other agencies and owners. If possible, references should be from the projects listed above.
- d. List and describe any litigation; arbitration; claims filed by your firm against any project owner as a result of a contract dispute; any claim filed against your firm; termination from a project.
- e. Applicant's capacity and intent to proceed without delay if selected for this work.
- f. Type and amount of self-performed work.
- g. Describe your experience with and ability to provide the following:
 - High level of 3D, Virtual Immersive Reality, and Holographic equipment, such as the systems planned for the 3D and Virtual Reality Studio that enables visitors, students and staff to easily navigate systems and view all data through sub-systems working in complete harmony.
 - Intraoperative surgical suites, specialized procedure rooms, interactive medical collaboration 3D visualization, clinical audio video networks, A robust hub-and-spoke network. It will be necessary to interconnect at least 8 additional site.
 - Detail existing network infrastructure
 - Identify network deficiencies which may impact a University wide VTC or UC deployment and provide resolution of identified deficiencies
 - Instruct various network administrators on how and what reports need to be generated in order to build a useful network assessment
 - Provide communication services for network design, management and monitoring.

3.3.3 Team Experience & Qualifications

(20 points)

- a. Describe each team member's position within the firm. Provide resumes of each proposed team member in Appendix A. List professional continuing education.
- b. Briefly describe each team member's role on this project.
- c. Provide "team" experience working together on similar projects.
- d. Identify proposed technology subconsultants/subcontractors, and your method of technology subconsultant/subcontractor selection, if applicable. Attach a proposed Technology Subconsultant/Subcontractor Selection Plan as part of Appendix A.
- e. Explain your understanding of, and experience with, the TI Delivery Method.
- f. Describe the capability, depth and national/global experience in providing services for a world – class simulation facility in the areas of:
 1. Advanced Simulation
 2. Video Conferencing
 3. Digital Media Solutions
 4. Medical/Clinical Connectivity

3.3.4 Project Understanding and Approach

(10 points)

- a. Describe your understanding of the project
- b. Describe your willingness to work collaboratively with other suppliers of technology such as surgical, holographic, 3D/VIR and simulation systems.
- c. Describe your willingness to allow the Owner to manage the design and end-user process with a single POC.
- d. Describe your capability to design a system that allows multiple systems to operate together with a high level of cohesion.
- e. Describe your capability to provide speedy support staff and engineers with a wide range of support options and experience
- f. Describe your capability to help the Owner validate choices of vendors and components by comparing with benchmarking and best practices.
- g. Identify and discuss any potential problems during design and installation.
- h. Identify and discuss methods to mitigate those problems.
- i. Identify and discuss any potential problems during design and installation.
- j. Identify and discuss methods to mitigate those problems.
- k. Describe the work you anticipate self-performing, and the work you anticipate being performed by subconsultants/subcontractors.

3.3.5 Approach to Project Management

(10 points)

- a. Describe your approach to change orders.
- b. Describe your planning, scheduling, estimating, and installation management tools.
- c. Describe your quality control plan, dispute resolution, and safety management.
- d. Describe your approach to coordinating with consultants, building contractor and sub-contractors.

3.3.6 Approach to Building and Integration

(10 points)

- a. Identify and discuss your pre-installation process including procurement and fabrication
- b. Identify and discuss your installation process
- c. Capability of designing a system that allows multiple systems to operate together with a high level of cohesion.

3.5.7 Commissioning and Training

(10 points)

- a. Describe your approach to commissioning, testing and adjusting the systems
- b. Describe your capability and approach to systems training
- c. Describe your experience and resources available to provide and train the simulation staff to run the equipment and conduct basic trouble – shooting and offer training for identified “super users.”

3.5.8 Support and Service

(10 points)

- a. Describe your support and service capabilities
- b. Describe ability to offer ongoing support over a number of years (3-5) following complete installation.

3.3.9 Other Factors

(10 points)

- a. Current workload and ability to proceed promptly.
- b. Willingness to abide by the University’s standard form Agreements with few or no objections or changes.
- c. Describe your culture for instance, willingness to be customer driven, responsive, innovative and nimble; an organization that understands UNMC’s business goals and is responsive to assisting in these goals.
- d. Interest in crafting an agreement in the context of a long-term collaborative relationship that allows for mutual benefit (private/public partnerships) to ensure the long - term success of the technology selection and integration, as well as the success of both entities.
- e. Provide statement regarding your assurance that this engagement will not result in a conflict of interest.
- d. Relevant factors impacting the quality and value of work.

4 - SUBMITTAL REQUIREMENTS

- 4.1 The SOQ shall include a one-page cover letter plus a maximum of fifteen (15) pages to address the SOQ criteria specified in Section 3 (excluding Resumes and Technology Subconsultant/Subcontractor Selection Plan). Table of Contents and section divider pages do not count towards the total page count. Resumes for each key team member shall be limited to no more than two pages. Resumes and Technology Subconsultant/Subcontractor Selection Plan shall be attached as Appendix A.
- 4.2 One electronic copy (.pdf preferred) of the Statement of Qualifications and Appendix A must be submitted to UNMC via email at craig.ellis@unmc.edu and received by 2:00 PM CST on Thursday December 17, 2015.
- 4.3 Failure to comply with the following criteria may be grounds for disqualification:
 - Receipt of submittal by the specified cut-off date and time.
 - The number of originals and/or copies of the submittal specified.
 - Adherence to maximum page requirements.
- 4.4 Adherence to the maximum page criteria is critical; each page side (maximum 8 1/2” x 11”) with criteria information will be counted. Pages that have photos, charts and graphs will be counted

towards the maximum number of pages.

5 - SELECTION PROCESS AND SCHEDULE

5.1 A minimum 5-member Project Evaluation Board will evaluate each Statement of Qualifications (SOQ) according to the above criteria and select a minimum of three finalists that will be Short Listed for the project. The Short List firms will meet with the Project Evaluation Board for interviews. The purpose of the interview will be to expand on the information provided in the SOQ, not to repeat information already provided. Those firms selected for the Short List will be provided additional instruction by the University. Those firms not selected for further consideration will be notified.

5.2 The following tentative schedule has been prepared for this project. Firms interested in this project must be available on the interview meeting date.

SOQs due:	Thursday December 17, 2015
Firms notified for interview:	Friday January 8, 2016
Interviews:	Friday January 15, 2016

5.3 Following the interviews the Project Evaluation Board will determine a ranking for each Short List firm based on the published criteria in 3.3 of this RFQ. If additional questions arise during review of the SOQ, the questions and points awarded will be sent to the Short Listed firms with their additional instructions. Consideration will be given to both the written Statement of Qualifications and any oral presentations or interviews. No other factors or criteria will be used in the qualification ranking.

5.4 The highest ranked firm will be recommended to the Vice President, Business and Finance for contract award.

5.5 Requests for debriefings or to review Statements of Qualifications submitted, shall be made in writing to the University. All information submitted by firms and related Project Evaluation Board evaluations and rankings shall be considered confidential until after contract execution and award by the Board of Regents.

5.6 The University will enter into negotiations with the selected firm and execute a contract upon completion of negotiations of pre-installation services for Board of Regents approval. If the University is unsuccessful in negotiating a contract with the highest scoring team, the University may then negotiate with the second or third highest scoring team until a contract is executed, or may decide to terminate the selection process.

5.7 At the conclusion of the Pre-Installation Services or earlier, after the selected TI has submitted a installation GMP, the University will execute a contract with TI for complete installation services if the proposed GMP is acceptable to the University and upon completion of negotiation of contract terms for the Board of Regents approval. If the University is unsuccessful in negotiating an installation contract with the TI, the University may decide to terminate the selection process and award installation through the competitive low bid process.

PROGRAM STATEMENT

TO: The Board of Regents Addendum IX-B-5
Business Affairs

MEETING DATE: October 9, 2015

SUBJECT: Program Statement for the Global Center for Advanced Interprofessional Learning to be constructed on the University of Nebraska Medical Center campus in Omaha.

RECOMMENDED ACTION: Approve the Program Statement for the Global Center for Advanced Interprofessional Learning.

PREVIOUS ACTION: April 10, 2015 - The Board of Regents approved the establishment of the Interprofessional Experiential Center for Enduring Learning (iEXCELSM) in the Global Center for Advanced Interprofessional Learning at the University of Nebraska Medical Center campus in Omaha.

EXPLANATION: The implementation of the Interprofessional Experiential Center for Enduring Learning (iEXCELSM) will enable UNMC to take a major transformative step in delivering superior health sciences education and clinical care through the implementation of competency-based learning and assessment, integrated with interprofessional education and team-based learning throughout the career-long health sciences education process. Such learning, in advanced simulated clinical settings, and through the use of virtual immersive reality technology, will improve student mastery and skills retention, improve patient outcomes and as a result, lower the cost of health care.

The Global Center for Advanced Interprofessional Learning project will construct a new 134,000 square foot, multi-level structure to house and support the activities of the iEXCELSM. Additionally, the project will construct 56,000 square feet of structured parking (about 120 stalls) below the building for a total area of 190,000 square feet.

The building will be designed and equipped to provide:

- x A 3D and virtual immersive reality learning studio, with collaborative and personal virtual learning venues supported by extensive state-of-the-art visualization and performance capture technology.

- x An electronic learning media development studio equipped with a network communications platform designed to deliver learning content to remote locations. This will enable the creation of a hub- and-spoke network of virtual simulation centers at prepared education and clinical sites across Nebraska.

x Realistically simulated clinical and community health care space, with operable systems for experiential, individual and team learning

and assessment. The design of the various simulated settings will model transitions of care, since patient hand-offs from care team to care team pose points of greater risk. Simulated space will follow a patient from the point of presentation through various hospital and clinic functions to post-discharge community-based care settings. Also included will be a simulated bio-containment suite.

x Surgical skills simulation space with capability for surgical technology development, and collaborative spaces for biomedical technology development.

x Reception, interaction and collaboration facilities to accommodate the anticipated volume of learners, developers, and visitors.

The planned construction site is currently developed as a surface parking lot located at the southeast corner of 42nd and Emile Streets on the UNMC Midtown Omaha campus. The site also is occupied by a metal building to be demolished formerly housing the UNMC General Supply Warehouse. Two skywalks will be constructed to enable easy access to the new building from clinical areas of the campus and to facilitate the shared use of event spaces and other learning resources in adjacent campus buildings, one to the Michael F. Sorrell Center for Health Science Education adjacent to the north, and one to the Lauritzen Outpatient Center adjacent to the east.

Construction of the building portion of the project will be competitively bid, with the construction contract awarded to the low responsible bidder.

The planned virtual immersive reality, simulation-capture, media production, network communications and associated equipment must be designed and installed to operate as a highly functional, integrated system. It is proposed to select a "technology integration" firm to design, procure, install, and commission this mission critical equipment. The process would follow the procedures set out for Qualification Based Selection.

The iEXCELSM and Global Center for Advanced Interprofessional Learning at UNMC will provide a transformative learning resource that positions Nebraska as world-leading in competency-based, experiential learning and assessment, interdisciplinary education, and the advancement of clinical practice through the use of innovative technologies in simulation and virtual immersive reality. The project will also provide facilities designed and equipped to develop novel products, procedures and processes to advance learning and patient care, attracting new collaborative partnerships, helping to attract and retain top talent and serving as an economic driver for the community, state and region.

The program statement has been reviewed and recommended for approval by the Business Affairs Committee.

The project will not commence until commitments for all funding are in place and authorization to proceed is received from the President.

Proposed Construction Start	January 2017
Proposed Construction Complete	June 2018

PROJECT COST: \$102,000,000

ON-GOING FISCAL IMPACT:	Estimated Operating and Maintenance	\$1,500,000
	Additional Programmatic Costs	3,500,000

SOURCE OF FUNDS:	State Funds	\$ 25,000,000
	Private Funds	<u>77,000,000</u>
		<u>\$102,000,000</u>

SPONSOR: Deborah L. Thomas
Interim Vice Chancellor for Business and Finance

RECOMMENDED: Jeffrey P. Gold, Chancellor
University of Nebraska Medical Center

DATE: September 16, 2015

Global Center for Advanced Interprofessional Learning Program Statement University of Nebraska Medical Center

Date: July 29, 2015

Prepared by: UNMC Facilities Management and Planning, and Academic Affairs, with The Clark Enersen Partners as programming architect.

Phone: (402) 559-5022

I. INTRODUCTION

A. Background and History

Health professions education at UNMC continually evolves in order to prepare the best-educated and highly competent health professionals and scientists. Education has developed in recent years well beyond traditional classroom lectures and clinical experience rotations to include newer modes of education, for example problem solving in mentored small groups and the implementation of “flipped classroom” pedagogy. Distance and “on-demand” delivery of course content made possible by the advancement of digital media and networked communications capabilities have further improved the effectiveness and reach of health care education. Of particular importance is the introduction of advanced clinical simulation, offering health professions students the ability to learn, safely practice and be assessed on their mastery of basic, as well as complex procedural skills and patient care delivery in UNMC’s current simulated health care settings using high-fidelity mannequins and “standardized” patient actors.

Advanced clinical care requires team-based delivery. The complexity of providing highly proficient and cost effective team-based care increases with the rapid advancement of clinical technology and medical understanding. The development and application of advanced clinical skills simulations and care-team

proficiency building in simulated environments has become the state-of-the-art means of accelerating both individual and team skills mastery and retention in order to improve interprofessional health care delivery and patient outcomes.

As a result of the demonstrated success of simulations in achieving enhanced learning and improved health care delivery, UNMC faculty have gained considerable expertise in the development of new clinical simulations and the utilization of existing simulation facilities at UNMC is increasing steadily, taxing capacity.

With this preparation and experience, UNMC is now positioned to take a major transformative step in delivering superior health sciences education and clinical care through the integration of team based learning with individual learning in advanced simulated clinical settings, and through the use of virtual immersive reality technology, to improve student mastery and skills retention, improve patient outcomes, and lower the cost of health care:

- x At its April, 2015 meeting, the Board of Regents approved the establishment of the Interprofessional Experiential Center for Enduring Learning (iEXCELSM) to be housed in the Global Center for Advanced Interprofessional Learning to be constructed at the University of Nebraska Medical Center campus in Omaha. The iEXCELSM and Global Center for Advanced Interprofessional Learning will position UNMC and Nebraska to be a world leader in using near real life simulated clinical settings and virtual reality scenarios to transform career-long health care education and training. With iEXCELSM programs, students and clinicians will learn clinical skills and concepts more effectively and retain that knowledge longer, because it will be hands-on and competency-based, allowing individuals to progress at their own pace toward full mastery of material or skills. The iEXCELSM will also develop new ways of teaching and learning through research and development. The Global Center for Advanced Interprofessional Learning, incorporating 3D & virtual immersive reality technology, will place UNMC in a leadership position for recruiting the finest students, faculty and staff.
- x The Board of Regents, also at its April 2015 meeting, adopted a Resolution of support for LB532 and LB533, Interprofessional Experiential Center for Enduring Learning (iEXCELSM) in the Global Center for Advanced Interprofessional Learning.
- x The Nebraska Legislature approved provisions of LB 532, amended into LB 660 and LB 662, authorizing the design and construction of the Global Center for Advanced Interprofessional Learning at the University of Nebraska Medical Center. Governor Ricketts signed into law an appropriation of \$25,000,000 for that purpose on May 20, 2015.
- x The Nebraska Coordinating Commission for Post Secondary Education reviewed and approved the establishment of the Interprofessional Experiential Center for Enduring Learning (iEXCELSM) at its June 25, 2015 meeting.

B. Project Description

The Global Center for Advanced Interprofessional Learning is one of the most transformational ventures that UNMC has undertaken. The educational resources that will be used in this center -- which will be deployed across the state -- will change the way we educate in health care and may be applied to other NU academic programs.

The Global Center for Advanced Interprofessional Learning project will construct a new 134,000 square foot, multi-level structure to house and support the activities of the iEXCELSM plus 56,000 GSF of structured parking below the building, creating a venue that will stimulate and facilitate interprofessional education and teamwork early in and throughout the educational process.

The building is planned to contain:

- x A 3D and virtual immersive reality learning studio, with collaborative and personal virtual learning venues supported by extensive state-of-the-art visualization and performance capture technology.
- x An electronic learning media development studio equipped with a network communications platform designed to deliver learning content to prepared remote locations.
- x Realistically simulated clinical and community health care space, with operable systems for experiential, individual and team learning and assessment. The design of the various simulated settings will model transitions of care, since patient hand-offs from care team to care team pose points of greater risk. Simulated space will follow a patient from the point of presentation through various hospital and clinic functions to post-discharge community based care settings. Also included will be a simulated bio-containment suite.
- x Surgical skills simulation space with capability for surgical technology development, and collaborative spaces for biomedical technology development.
- x Reception, interaction and collaboration facilities to accommodate the anticipated volume of learners, developers, and visitors.

Architecturally, the building will be designed to be prominent, while complementing other campus architecture. By its nature, it will be relatively complex, combining elements of clinical, research and data processing buildings, requiring a specialized yet flexible space layout and robust structural, mechanical, electrical, and telecommunications systems. Traditional enclosed offices will be minimized, designed instead with work areas optimized for both quiet work and collaboration.

Two skywalks will be constructed to enable easy access from clinical areas of the campus and to permit the shared use of learning facilities in adjacent campus buildings, one to the Michael F. Sorrel Center for Health Science Education and one to the adjacent Lauritzen Outpatient Center.

C. Purpose and Objectives

The purpose of the Global Center for Advanced Interprofessional Learning project is to provide the built environment for the development and delivery of highly integrated and interdisciplinary, adaptive experiential learning in the health sciences through the programs of the iEXCELSM.

The successful completion of the Global Center for Advanced Interprofessional Learning project will:

- x Facilitate a transformative learning culture that positions UNMC as a world leader in interdisciplinary education, experiential learning and the advancement of clinical practice with the goals of improving patient care outcomes and reducing medical errors through improved human performance.
- x Facilitate the transformation of education and discovery at UNMC through the use of innovative technologies in simulation and virtual immersive reality; transition a major component of health science education to competency-based learning; and create a transferable model that enables the progression of the individual learner toward mastery of material and skills.

- x Create an environment and technology platform that fosters the development of innovative partnerships to advance learning and patient care and to develop new products, procedures, processes and technology, helping to attract and retain top talent.
- x Serve as an economic driver for the community, state and region, as faculty partner with other academic institutions, industry, government, and the military to research, develop and stay abreast of the newest tools and techniques necessary to advance health care.
- x Create a hub-and-spoke network communications platform to audio-visually connect prepared education and clinical sites across Nebraska, creating a network of virtual simulation centers, including UNMC campuses in Lincoln, Kearney, Scottsbluff and Norfolk, as well as locations served by UNMC's primary clinical partner, Nebraska Medicine, and its regional health partners. It will also serve as a resource to Nebraska's state colleges and the military, bolstering continuing education statewide for all of Nebraska's health care practitioners, enhancing the safety and level of patient care.
- x Decrease the cost of health care, as providers master preparedness at all levels, learn to function more effectively as teams and make fewer errors because they've received a more effective, competency-based education.

II. JUSTIFICATION OF THE PROJECT

A. Data That Support the Funding Request

As one of 171 medical centers in the United States, the University of Nebraska Medical Center ranks 4th in training primary care physicians; 9th in training of rural care physicians, and is in the 10th percentile for many other professional training programs. With about 3,000 healthcare professionals in training at any one time and a high percentage of graduates retained in the State of Nebraska, UNMC bears a significant responsibility for the quality and safety of healthcare for Nebraskans.

The current healthcare delivery system in the United States is undergoing major challenges, including an unacceptably high number of avoidable medical errors (estimated at 400,000 per annum), escalating healthcare costs, and an increasing number of underserved patients – especially in rural areas. The current healthcare professions educational model is outdated related to helping address these challenges from early in training and throughout a lifetime of practice.

Desirous of maintaining excellence in healthcare education and providing national and global leadership in improving human performance and effectiveness in health care through transforming the education of healthcare professions, the Global Center for the AdvancementSM of Healthcare Professionals (iEXCELSM) is designed to change the paradigm for educating the future healthcare work force. This includes expanding simulation based training by 100% and exploring the feasibility of creating a competency-based training model - in contrast to the current time-based model.

Healthcare Work Force

The proposed change in paradigm is to ensure that sufficient (and the right mix) of healthcare professionals are trained for the work force in a manner that is relevant to meet the current and future health care system needs. It is predicted, for example that the demand for registered nurses will expand by

50% with the US nursing workforce projected to grow to 260,000 registered nurses by 2025. The number of vacancies reported for pharmacists in the US has doubled with a shortfall of as many as 157,000

pharmacists predicted by 2020. The United States will require at least 52,000 more family doctors in the year 2025 to keep up with the growing and increasingly older U.S. population. This predicted shortage of healthcare providers particularly affects the rural areas of Nebraska.

Safety, Quality and Cost of Healthcare

In addition to having the most expensive health care in the world, preventable medical errors account for 1/6th (210,000 deaths) that involve diagnostic errors, errors of omission and technical/procedural errors. With the financial cost estimated at \$25 billion dollars annually. iEXCELSM is purposefully designed to use simulation training for ensuring that healthcare professionals are educated with “hands-on” training in simulated healthcare environments in which they can practice their professional skill development and learn to work as healthcare teams. It is expected that over 20,000 healthcare professionals will utilize iEXCELSM in the first year of operations, with a 20% increase in utilization each year thereafter.

The Institute for Healthcare Improvement (IHI) has tied the future of excellent health outcomes in the United States to three principles: *a) improving the quality of care for all patients, b) effectively managing population health and c) reducing the cost of care.*

The five hundred mile-wide campus of UNMC spanning the state of Nebraska will provide the ideal venue to address these IHI principles. The proposed project includes the development of a hub and spoke simulation model of training for health professions education, maintenance of competency and patient education. All of the UNMC campus locations spanning from Scottsbluff to Omaha will benefit from high fidelity simulation that while centralized in a highly effective and efficient site on the Omaha UNMC campus will benefit healthcare education across the State. However, through improved performance by healthcare professionals, the greatest beneficiaries will be the patients in the State of Nebraska.

B. Alternatives Considered

Important site selection criteria for the Global Center for Advanced Interprofessional Learning include proximate connection to the clinical core of the Omaha campus to enable direct access for on-campus students and practitioners, ease of access and parking for the expected volume of off-campus learners, and to accommodate building logistics. Based on these criteria, the only site suitable and available for construction is land immediately to the south of the Michael F. Sorrell Center for Health Science Education.

III. LOCATION & SITE CONSIDERATIONS

A. County: Douglas

B. Campus: University of Nebraska Medical Center

C. Proposed Project Site: The proposed construction site is currently developed as a surface parking lot located at the southeast corner of 42nd and Emile Streets on the UNMC Midtown Omaha campus. The site is also occupied by a metal building formerly housing UNMC General Supply Warehouse operations. For site selection criteria see II. B. Alternatives Considered.



**Global Center for Advanced Interprofessional Learning
Conceptual Site Rendering**

D. Statewide Inventory: Not applicable, new building.

E. Influence of project on existing site

conditions: A. Relationship to Neighbors

The proposed location of the new building is directly south of the Michael F. Sorrell Center for Health Science Education and west of the new Lauritzen Outpatient Center currently under construction. Both of these buildings will be connected to the Global Center for Advanced Interprofessional Learning via skywalks.

Constructing a skywalk from the new building to the Michael F. Sorrell Center for Health Science Education will provide access to that building's skywalk connecting across 42nd Street to the historical clinical core of the campus and with closer proximity to other campus education buildings. The Sorrell Center's large lecture halls, flexible event space, and existing simulation facilities suitable to supplement the event resources to be provided in the new facility, will also be directly accessible, further enhancing interprofessional education and collaboration capabilities.

The planned building site holds a prominent position at the southeast corner of 42nd and Emile streets, with primary exposures to public view from the south, west, and northeast. The new building will present as an important gateway structure identifying the south entry to the campus. Given its advantageous adjacency to the Sorrell Center, the new building will be designed to reflect that building's curved south façade and feature a complementary pedestrian plaza area. The two buildings will work together as a venue for larger educational events.

B. Utilities

Connections for steam, condensate, chilled water, normal and emergency electrical power, and high capacity fiber optic communications will be extended to campus utility distribution lines located adjacent to the building site. Piping for domestic water, storm and sanitary sewer will be connected to public infrastructure.

C. Parking & Circulation

Construction of the new building will displace all 83 stalls of the existing surface parking lot. Parkers displaced will be assigned to existing other campus parking lots, per UNMC policy. Approximately 120 structured parking stalls will be constructed under the new building to accommodate the projected volume of learners visiting the building. The addition of parking under the building is made feasible and even desirable by the steep grade of the construction site. Without using the downhill area for parking, a large void in would result requiring additional structure and extensive fill.

IV. COMPREHENSIVE PLAN COMPLIANCE

A. University of Nebraska Strategic Planning Framework

The objectives of this project align with many of the goals of the University of Nebraska Strategic Planning Framework 2014-2016 as follows:

Goal 1. The University of Nebraska will provide the opportunity for Nebraskans to enjoy a better life through access to high quality, affordable undergraduate, graduate and professional education.

- d. Expand lifelong educational opportunities, including those for non-traditional and transfer students.
- g. Expand distance education programs, taking advantage of university-wide marketing and efficiencies and campus role and mission, strengths and entrepreneurship.

Goal 2. The University of Nebraska will build and sustain undergraduate, graduate and professional programs of high quality with an emphasis on excellent teaching.

- a. Pursue excellence through focus on targeted programs in areas of importance to Nebraska where the university can be a regional, national and/or international leader (e.g. agriculture and natural resources, life sciences, information technology and architectural engineering).
 - iii. Campuses are encouraged to collaborate to achieve overall university goals.*
- b. Provide opportunities for global engagement of faculty through international teaching, research and outreach exchanges, fellowships and collaborations.

Goal 3. The University of Nebraska will play a critical role in building a talented, competitive workforce and knowledge-based economy in Nebraska in partnership with the state, private sector and other educational institutions.

- e. Encourage and facilitate the commercialization of research and technology to benefit Nebraska.
- f. Develop and strengthen internship and service learning opportunities with business, education, government, military, and nonprofit organizations.
- g. Engage in partnerships with government and the private sector to develop regional economic strength.
- h. Pursue excellence in educational attainment aligned with the long-term interests of the state. *Develop educational programs that prepare students for the flexibility required to respond to the uncertainty of*

future workforce demands. Develop distance education and other educational programs that permit Nebraskans to prepare for jobs and opportunities to meet future workforce demands.

Goal 4. The University of Nebraska will pursue excellence and regional, national and international competitiveness in research and scholarly activity, as well as their application, focusing on areas of strategic importance and opportunity.

- a. Increase external support for research and scholarly activity.
 - i. Increase federal support for instruction, research and development, and public service.*
 - ii. Inventory and forecast infrastructure (physical facilities, information technology, equipment) necessary to support continued growth in research activity and secure private and public support to eliminate deficiencies.*
- b. Increase undergraduate and graduate student participation in research and its application.
- c. Encourage and support interdisciplinary, intercampus, inter-institutional and international collaboration.
- d. Improve the quantity and quality of research space through public and private support.
- e. Focus resources on areas of strength in research where the university has the opportunity for regional, national and international leadership and in areas of strategic importance to the health and economic strength of Nebraska (e.g. agriculture and life sciences; natural resources, especially water; prevention and cure of diseases such as cancer; and early childhood education).

Goal 5. The University of Nebraska will serve the entire state through strategic and effective engagement and coordination with citizens, businesses, agriculture, other educational institutions, and rural and urban communities and regions.

- c. Support Nebraska's economic development.
 - i. Partner and collaborate with government and the private sector to attract, retain, and spur business development and economic opportunity.*
 - ii. Use university research and other resources to foster more effective relationships with the private sector.*
- d. Support entrepreneurship education, training and outreach.
- e. Collaborate with the public and private sectors to build successful regional, multistate, international linkages.
- f. Use university resources to engage Nebraskans outside cities where our major campuses are located.

Goal 6. The University of Nebraska will be cost effective and accountable to the citizens of the state.

- b. Maintain a safe environment for students, faculty, staff and visitors.
 - ii. Collaborate with state and local government in disaster planning.*
- c. Allocate resources in an efficient and effective manner.
 - ii. Leverage roles and missions of campuses to find savings and cost reductions through academic, administrative and business process efficiencies and effectiveness.*
- d. Maximize and leverage non-state support.
 - i. Promote entrepreneurship and revenue-generating opportunities.*

B. University of Nebraska Medical Center Strategic Plan 2015 to 2018 - The UNMC/Nebraska Medicine Strategic Plan 2015 to 2018 identifies the implementation of the Interprofessional Experiential Center for Enduring Learning (iEXCELSM) as its highest priority educational program.

V. ANALYSIS OF EXISTING FACILITIES

A. Function and purpose of existing programs as they relate to the proposed project:

The College of Medicine has a simulation laboratory at the Sorrell Center. The College of Nursing also has smaller simulation laboratories in each of its division buildings. The College of Dentistry has simulated dental operatories. The College of Allied Health Professions has simulation laboratories both in Omaha and Kearney. The College of Pharmacy is in the process of creating new simulation labs to be opened in 2016, and there is one simulated surgical suite that operates independently of the other simulation centers. While these labs have and will continue to serve our students very well, they would benefit from:

- x Conceptual integration
- x Continued growth of interdisciplinary simulations and team training
- x Simulations designed to practice the hand over of care from one level of care to the next
- x Capacity to train more than one or a small group of students at the same time.
- x Creation of an academic/business model (research and development)
 - x Additional space for addressing the change in paradigm to expanded experiential learning programs and for large-scale training.
- x Engaging in a significant number of quality improvement simulations with hospital partners
- x Statewide coordination
- x Additional research into the impact of simulation on human performance and patient outcomes
- x Collaboration with military and corporate partners

B. Physical and Programmatic Deficiencies

Physical Deficiencies - Current simulation facilities, although for the most part recently constructed, state-of-the-art when built, continually updated, and, with an annual growth of 5% to 8%, have become space limited requiring frequent and inefficient furniture and equipment reconfiguration.

Programmatic Deficiencies – See V. A.

VI. FACILITY REQUIREMENTS AND THE IMPACT OF THE PROPOSED PROJECT

A. Functions & Purpose of Proposed Program – See Project Description

1. Projected Occupancy, Use, Staffing

- a. **Usage Data** - See Section II. A.
- b. **Staffing**

Department	Year 1 FTE	Year 2 FTE	Year 3 FTE
iEXCEL SM Leadership Team	5	5	5
iEXCEL SM Operations	1	11	18
Total *	6	16	23

**Does not include contingent, temporary or student workers.*

B. Space Requirements of Proposed Project

1. Square Footage by Function

Use Code	Functional Area	Quantity	NSF Each	NSF
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3D & VIRTUAL REALITY STUDIO				
620	Lobby/Technology Display Area	1	5,000	5,000
130	3D Virtual Immersive Environment (CAVE)	1	1,000	1,000
130	Curved CAD Wall Environment	2	1,000	2,000
130	Small CAD Wall Environment	2	500	1,000
130	Large Interactive Touch-Screen Environment	2	1,000	2,000
130	Small Interactive Touch-Screen Environment	4	300	1,200
130	Holographic Auditorium	1	2,500	2,500
130	Open, Flexible Technology Room	1	2,000	2,000
130	Innovation and Demonstration Room	1	500	500
130	Virtual Environment Radiotherapy Simulator	1	1,200	1,200
135	Technology Equipment and Service	1	1,000	1,000
135	Equipment Storage	1	1,000	1,000
Subtotal – 3D & Virtual Reality Studio				20,400

ADVANCED CLINICAL SIMULATION				
211	Community-Based Care Services Ambulatory Care Smart Exam Room Assessment Therapy (Physical Therapy, Dental Care, Speech/Audiology Therapy, Medication Therapy)	2	200	400
211	Home Care/First Responder Unit	1	800	800
211	Ambulance/Transport Unit	1	600	600

Use Code	Functional Area	Quantity	NSF Each	NSF
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211	Innovation Studio	1	400	400
311	Office	1	120	120
215	Equipment Storage	1	500	500

Acute/Intensive Care Services				
211	ED/Trauma Unit	1	400	400
211	Operating Room Unit	1	600	600
211	Intensive/Critical Care Unit/Electronic ICU	1	600	600
211	Labor/Delivery/Recovery Unit	1	400	400
211	Pediatric Care/Newborn Nursery Unit	1	400	400
211	Patient Room	2	400	800
211	Procedure Room Unit	4	400	1,600
111	Pre-Briefing Room (20-24 people)	2	600	1,200
111	Post-Briefing Room (8-10 people)	8	200	1,600
215	Control Room	2	1,000	2,000
311	Manager's Office Shared	1	120	120
311	Open Office Equipment	1	800	800
215	Storage Simulation	1	3,000	3,000
215	Workshop Space	1	500	500
Biocontainment Training Suite				
211	Gowning/Locker/Shower	1	200	200
211	Patient Room (Single Patient)	1	400	400
211	Patient Room (Dual Patients)	1	400	400
215	Support Room	1	400	400
211	Laboratory	1	150	150
215	Decontamination/Sterilization	1	300	300
215	Storage	1	400	400
Subtotal – Advanced Clinical Simulation				21,590

ADVANCED SURGICAL SKILLS SIMULATION				
Surgical Skills				
211	Surgical Skills	4	1,800	7,200
211	Advanced Surgical Skills	1	600	600
211	Procedural Skills	1	1,200	1,200
215	Locker Room/Surgery Prep/Gowning	2	800	1,600
215	Control Room	1	400	400
111	Pre-Briefing Room Post-	1	600	600
111	Briefing Room	4	200	800
215	Decontamination/Sterilization	1	300	300
311	Manager Office	1	120	120
311	Staff Stations	4	80	320
350	Industry Collaboration Room	1	500	500
215	Equipment Storage	1	600	600

Use Code	Functional Area	Quantity	NSF Each	NSF
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Tissue Prep and Storage				
264	Cadaver Storage (Freezer and Cooler)	1	1,500	1,500
225	Tissue Prep	1	400	400
225	Fresh Tissue Storage	1	150	150
Subtotal – Advanced Surgical Skills Simulation				16,290

TECHNOLOGY DEVELOPMENT AND TRANSFER				
Creative Development				
311	Software Development Suite	1	1,200	1,200
350	Interaction Studio	1	300	300
315	Technology Support	1	150	150
315	Equipment Storage	1	200	200
Technology Hub				
315	Master Control Room	1	1,000	1,000
534	Recording Studio	1	500	500
311	e-Learning Suite	1	500	500
350	Interaction Studio	1	300	300
315	Technology Support	1	150	150
315	Equipment Storage	1	200	200
Technology Transfer				
311	Software Development Suite	1	600	600
253	Biomedical Device/Systems Development	1	600	600
253	3D Printing	1	300	300
350	Interaction Studio	1	300	300
315	Technology Support	1	150	150
311	Military & Industry Collaboration Suite	1	1,000	1,000
315	Equipment Storage	1	200	200
Digital Education Center				
160	Training Room	1	1,600	1,600
311	Software Development	1	400	400
350	Interaction Studio	1	300	300
315	Technology Support	1	150	150
315	Equipment Storage	1	200	200
Subtotal - Technology Development and Transfer				10,300

ADMINISTRATION AND INTERACTION				
Leadership Suite				
321	Waiting and Reception	1	300	300
310	Associate Vice Chancellor Office	1	160	160

Use Code	Functional Area	Quantity	NSF Each	NSF
310	Executive Director Office	2	140	280
311	Staff Office	6	120	720
311	Volunteer Space	2	120	240
311	Event Management	2	120	240
350	Conference Room	1	400	400
332	Work Room	1	200	200
330	Break Room	1	660	660
355	Storage	1	200	200

Interaction and Collaboration				
350	Interprofessional Collaboration Open Areas	2	300	600
350	Interprofessional Collaboration Rooms	2	600	1,200
635	Warming Kitchen	1	300	300
350	Global Conference Room	1	660	660
355	Visitor Luggage/Coat Room	1	200	200
Subtotal – Administration and Interaction				6,500
BUILDING SUPPORT				
740	Enclosed Garage	1	1,000	1,000
712	Server Room Suite	1	600	600
715	IT Support Suite	1	600	600
320	Lactation Room	1	100	100
271	Medical Gas Cylinder Storage	1	200	200
765	Waste Storage	1	1,000	1,000
026	Shipping and Receiving	1	1,000	1,000
014	Storage/Recycling	1	800	800
Subtotal - Building Support				5,300
Building Net Assignable SF				80,380
Building Net-to Gross Ratio				60%
Building Gross SF				134,000
Structured Parking				
780	Structured Parking Level (60 Stalls per Level)	2	28,000	56,000
Subtotal – Structured Parking				56,000
TOTAL BUILDING GROSS SF				190,000

2. Planning Parameters - All spaces have been programmed using UNMC space standards, benchmarking data from similar facilities, and good architectural practice.

3. Difference Between Existing and Proposed – Not applicable.

C. Impact of the project on existing space:

1. Reutilization and function(s) – Current Simulation space in all education buildings will remain in service to provide basic clinical skills learning and assessment.

2. Demolition – It is planned to demolish the existing surface Parking Lot 4 at the southeast corner of 42nd and Emile streets and the vacated General Supply Warehouse at the southern part of the proposed site.

3. Renovation – Not applicable.

VII. EQUIPMENT REQUIREMENTS

A. List of available equipment for reuse – Due to the fact that the facility and program are new, there is no plan to reuse or relocate any existing equipment or furnishings. Some equipment migration from existing simulation areas to the new building may occur over time.

B. Additional Equipment – A list of proposed categories of new equipment is as follows:

- x Furniture & Office Equipment
- x Clinical Equipment
- x Surgical Equipment
- x Virtual Immersive Reality Equipment
- x Media Production Equipment
- x Network Communications Equipment

C. Equipment Procurement – Furniture and office equipment, and most clinical and surgical equipment will be purchased following current Board policy. Proposed virtual immersive reality, simulation-capture, media production, network communications and associated equipment must be carefully designed so that the completed installation operates as a highly functional, integrated system serving the intended educational purpose. It is proposed to select a "technology integration" firm to design, procure, install and commission this mission critical equipment. The process would follow the procedures set out for qualifications based selection with approval of the selected firm by the Board of Regents at the same time as project architect selection.

VIII. SPECIAL DESIGN CONSIDERATIONS

A. Construction Type - The construction of the new building will be Type IIA to create a flexible and adaptable building to meet current and future requirements. The facility will be designed for a mixed-use, non-separated assembly and business occupancy. The building will be designed in accordance with UNMC Design Guidelines to complement nearby campus buildings, and with the same materials used in the design of the Sorrell Center exterior.

B. Heating and Cooling Systems - The building HVAC system will be designed to provide appropriate temperature, humidity, and ventilation for all spaces. Air-handling units will be of the variable air volume type, connected to variable air volume reheat boxes for individual zone control. Exterior zones will be provided with perimeter heating where required. Exhaust systems will be provided for surgical skills areas to remove odors and fumes from the building. Occupancy sensors will be utilized in all spaces to capture energy savings. The building control system will be direct digital type and integrated into the campus-wide energy management and control system. The building will be designed to meet the requirements of the *International Energy Conservation Code (IECC)*, per State Statute 72-804.

C. Sustainability - The building will be designed to meet the requirements of the University of Nebraska Sustainable Design Policy.

D. Security - Building security will be considered in the design of the building including the installation of card access at desired locations, surveillance cameras and other physical security measures to be determined during the design process.

E. Life Safety/ADA - The facility will be designed in accordance with the International Codes 2012 Edition, all applicable NFPA 101-2000 code references and the 2010 ADA Standards for Accessible Design and the ICCI ANSI A117.1-2002 Accessibility Codes, and Title 156 of the Nebraska Administrative Code.

F. Historic/Architectural Significance - There are no historic considerations for this project.

G. Artwork - An artwork budget, sufficient for the project and consistent with Board of Regents policy, has been included in the project budget.

H. Phasing - The project will be bid specifying single-phase construction.

I. Future Expansion - The building will be designed for potential horizontal expansion to the south, either by contiguous construction or by skywalk connection to a future adjacent building. The feasibility of a future vertical expansion of the building may be considered as well during the schematic design phase.

IX. PROJECT BUDGET & FISCAL

IMPACT A. Cost Estimate Criteria

1. Standards/ Sources

The programming architect developed the opinion of probable construction cost for this project with input from the construction community. Cost estimates were normalized to the Lincoln and Omaha market areas. The preliminary estimate of the cost of building construction takes into account the intent for the building to be designed as a prominent campus structure and the complexity of its functional components.

The equipment cost for the building was developed based on best available benchmarked information analogous to projected programmatic needs. A consultant specializing in visualization, simulation capture, media production, and network communications technology will be engaged to develop a detailed technology specification and progressed cost estimate as part of continuing project planning.

2. Year, Month, Inflation Factor

The project cost estimate was prepared in July 2015. The cost estimate assumes a 4% annual inflation rate for the 27-month period from July 2015 to the midpoint of construction in September 2017.

3. Gross & Net Square Feet

	Building Efficiency (w/o parking)	Parking
Net Square Feet	80,380	120 Stalls
Gross Square Feet	134,000	56,000
Building Efficiency	60%	n/a

4. Project Cost & Construction Cost per Gross Square Foot

Unit Cost Data	Building	Parking
Project Cost/GSF	\$733.43	\$66.43
Construction Cost/GSF	\$435.95	\$61.29

B. Project Cost

BUDGET CATEGORY #1 --CONSTRUCTION COSTS

Probable

Cost

Construction Contracts :

	GSF	Cost/GSF	
Building Construction	134,000	\$ 330	\$
44,220,000			
Utilities to Site			
Electrical - Normal & Emergency			\$
300,000			
Steam & Chilled Water			\$
360,000			
Site Demolition and Underground Conditions Contingency			\$
1,000,000			
Plaza Area			\$
250,000			
Skywaks (linear Feet)	300	\$ 7,000	\$
2,100,000			

SubTotal Construction Contracts \$
48,230,000

Structured Parking (120 Spaces Under Building) 56,000 \$ 54 \$
3,024,000

Inflation to Construction Mid-Point 27 months @ 4.0%
4,737,000

Total General Construction Contract \$
55,991,000

Utility Company Fees and Contracts \$
50,000

In House Labor & Construction Including Building Controls per SF \$ 6.00 \$
804,000

Telecommunications per SF \$ 10.00 \$
1,340,000
 Upgrade campus to 10GB Service \$
 670,000
 Fiber Optics to Site \$
 50,000

Subtotal All Construction \$
58,905,000

Owner Construction Contingency 5.00% \$
2,945,000

SUBTOTAL COST CATEGORY #1 --CONSTRUCTION COSTS \$
61,850,000

C. Fiscal Impact:

FISCAL IMPACT	Amount
Operational & Maintenance costs per year	\$1,500,000
Additional Programmatic Costs	\$3,500,000

X. FUNDING INFORMATION

A. Total funds required: \$ 102,000,000

B. Project Funding Sources:

Funding Sources	Amount	% Total
State Funds	\$25,000,000	24.5%
Other Funds	-	-
Private Funds	\$77,000,000	75.5%
Total	\$102,000,000	100%

C. Fiscal year expenditures:

FISCAL YEAR	EXPENDITURES
FY2015-2016	\$ 1,500,000
FY2016-2017	\$ 47,500,000
FY2017-2018	\$ 50,000,000
FY2018-2019	\$ 3,000,000

XI. Project Timeline

Estimated Funding Complete	June 2016
Program Statement Approval	October 2015
Architect Selection Approval	December 2015
Technology Integrator Selection Approval	December 2015
CCPE Approval	January 2016
Intermediate Design Review	June 2016
Bid Project	November 2016
Start Construction	January 2017
Mid-Point Construction	September 2017
Substantial Completion	June 2018

XII. HIGHER EDUCATION SUPPLEMENT

A. Coordinating Commission for Public Education: CCPE review of the building will be required for this project.

B. Method of Contracting

1. Building Construction:

Method: The construction portion of the project will be bid, with subsequent contract award to the low responsible bidder.

Rationale for Method Selection: Bidding conditions in the Omaha construction market are currently favorable, and are expected to yield the most favorable price at the time the project is scheduled to be bid.

EXHIBIT B

Payments for Basic Design Service shall be made monthly in proportion to service performed so that compensation at completion of each Phase, except when compensation is on the basis of Direct Salary Expense, shall equal the following percentages of the total Design Services compensation:

Program Validation	5%
Preliminary Systems-Level Design	25%
Detailed Equipment Selection, System-Level Design and GMP Procurement and Installation to Substantial Completion	75%
Commissioning	90%
Completion of As-Builts, Building Information Model (BIM) and Close-out Documents	95%
Post Occupancy Commissioning	98%
	100%



EXHIBIT C

BIM EXECUTION PLAN

The Building Information Model (BIM) shall include the following minimum information & details listed in the plan and example below:

1. Overview

The intent of this BIM Execution Plan is to provide a framework that will let the owner, Technology Integrator (TI) and architect, engineers (AE) deploy Building Information Modeling (BIM) technology and best practices on this project faster and more cost-effectively. This plan delineates roles and responsibilities of each party, the detail and scope of information to be shared, relevant business processes, and supporting software. This document represents the best practices known to the team at the time of its preparation. Proposed revisions will be reviewed among the team and adopted as appropriate during the course of the project delivery.

2. Project Initiation

A. Project Information

1. Facility Owner:
2. Project Name:
3. Project Location:
4. Contract Type:
5. Facility Type:
6. Brief Project Description
7. Project Numbers:

B. Core Collaboration Team

ROLE	ORGANIZATION	NAME	EMAIL	TIME ZONE	PHONE
Project Manager					
BIM Manager(s)					
Code/Compliance & Architecture Lead					
Structural Lead					
Furnishings Lead					
Equipment Lead					

ROLE	ORGANIZATION	NAME	EMAIL	TIME ZONE	PHONE
Civil & Landscape Lead					
Fire Protection Lead					
Mechanical Lead					
Plumbing Lead					
Technology Lead					
Contractor Lead					
Subcontractor(s) Lead					

C. Project Goals and Objectives

1. Major BIM Goals/Objectives:

BIM GOAL	DESCRIPTION
Programming Verification	Verify program and space requirements.
Design Review	Conduct aesthetic and design progress check-ups (AE, TI, consultants, client).
Reduce Field Conflicts	Use clash-detection software during design/construction to identify and correct issues.
Prefabrication	Produce/construct prefabricated assemblies from coordinated models.
FM Model	Provide the owner as-built building information models to utilize in facilities management.

2. BIM Uses:

PLAN (NIC)		DESIGN		CONSTRUCT		OPERATE (NIC)
PROGRAMMING	X	DESIGN AUTHORIZING		SITE UTILIZATION PLANNING		BUILDING SYSTEM ANALYSIS
SITE ANALYSIS	X	PROGRESS REVIEWS		CONSTRUCTION SYSTEM DESIGN		ASSET MANAGEMENT
	X	INTERFERENCE MANAGEMENT (3D COORDINATION)	X	INTERFERENCE MANAGEMENT (3D COORDINATION)		SPACE MANAGEMENT / TRACKING
		STRUCTURAL ANALYSIS		DIGITAL FABRICATION		DISASTER PLANNING
		LIGHTING ANALYSIS		3D CONTROL AND PLANNING		
		ENERGY ANALYSIS	X	RECORD MODELING		OPERATION & MAINTENANCE RECORD MODELING
		PROGRAM VALIDATION		FIELD / MATERIAL TRACKING		

PLAN (NIC)		DESIGN		CONSTRUCT		OPERATE (NIC)	
			MECHANICAL ANALYSIS		DIGITAL LAYOUT		
			OTHER ENG. ANALYSIS				
			SUSTAINABILITY (LEED) EVALUATION	X	Prefabrication		
		X	CODE VALIDATION				
		X	LIFE SAFETY CODE ANALYSIS				
	PHASE PLANNING (4D)		PRELIMINARY CONSTRUCTION SCHEDULING (4D)		CONSTRUCTION SCHEDULING (4D)		BUILDING MAINTENANCE SCHEDULING (4D)
	COST ESTIMATION (5D)		COST ESTIMATION (5D)		COST ESTIMATION (5D)		COST ESTIMATION (5D)
	EXISTING CONDITIONS MODELING		EXISTING CONDITIONS MODELING		EXISTING CONDITIONS MODELING		EXISTING CONDITIONS MODELING
	CONSTRUCTION OPERATIONS BUILDING INFORMATION EXCHANGE (COBie)		CONSTRUCTION OPERATIONS BUILDING INFORMATION EXCHANGE (COBie)		CONSTRUCTION OPERATIONS BUILDING INFORMATION EXCHANGE (COBie)		CONSTRUCTION OPERATIONS BUILDING INFORMATION EXCHANGE (COBie)

D. Collaborative Process Mapping (Coordination Plan)

	OWNER	ARCHITECT	CONSULTING ENGINEER	CONSTRUCTION MANAGER	COMMISSIONING AGENT
Concept Design	Provide requirements related to form, function, cost, and schedule.	Begin design intent model with massing concepts and site considerations.	Provide feedback on initial building performance goals and requirements.	Provide feedback on initial building cost, schedule, and constructability.	Provide feedback on advanced commissioning requirements.
Program Requirements					
Schematic Design	Provide design review and to further refine design requirements.	Refine design model with new input from owner, consulting engineers, and construction manager. Conduct reverse phase scheduling activity.	Provide schematic energy modeling and system iterations as design model continues to develop.	Provide design review and continued feedback on cost, schedule, and constructability.	Refine advanced commissioning requirements .
Design Development	Department design reviews. Final approval of project design and metrics.	Continue to refine design model. Introduce consultants models and perform model coordination.	Create discipline-specific design models. Create detailed energy model.	Create construction model for simulation, coordination, estimates, and schedule.	Review design model for all disciplines.
Construction Documents		Finalize design model, construction documents, and specifications.	finalize discipline specific design models and final energy model.	Enhance construction model and perform final estimate and final construction schedule.	Review design model for all disciplines.
Final Buyout	Assist with code	Work with agencies on code	Work with agencies on code	Manage bid process, project buyout, and	

	OWNER	ARCHITECT	CONSULTING ENGINEER	CONSTRUCTION MANAGER	COMMISSIONING AGENT
Construction	compliance negotiations and permitting.	compliances, plan acceptance, and respond to construction RFIs.	compliances, plan acceptance, and respond to construction RFIs.	preconstruction RFIs.	
	Monitor construction and give input to construction changes and issues.	Perform contract administration, update design model with significant changes generated by subcontractors and suppliers or dimensional information from field.	Assist with RFIs and update discipline-specific design models, field conditions, and commissioning.	Manage construction model with subcontractors and suppliers and advise changes to design model. Provide trade coordination and produce coordinated drawings.	Observe construction and perform advanced commissioning.
Facility Management	Engage architect and Facilities group for model turnover to staff.	Coordinate information exchange through model to Facilities group.	Coordinate information exchange through model to Facilities group.	Coordinate desired outputs and closeout with contractor so they can be incorporated.	

E. Project Phases/Milestones:

3. Modeling Plan and Data Requirements

A. Model Managers

Each party—such as the owner, TI, AE, contractor, or sub-consultants—that is responsible for contributing modeling content should assign a model manager to the project. The model manager from each party has a number of responsibilities. They include, but are not limited to:

- Transferring modeling content from one party to another.
- Validating the level of detail and controls as defined for each project phase.
- Validating modeling content during each phase.
- Combining or linking multiple models.
- Participating in design review and model coordination sessions.
- Communicating issues back to the internal and cross-company teams.
- Keeping file naming accurate.
- Managing version control.
- Properly storing the models in the collaborative project management system.
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STAKEHOLDER COMPANY NAME	MODEL MANAGER NAME	EMAIL	PHONE

STAKEHOLDER COMPANY NAME	MODEL MANAGER NAME	EMAIL	PHONE

B. Planned Models

Model Name	Model Content	Project Phase	Authoring Company	Authoring Tool
Technology Integrator	Technology objects	All		
Architectural Model	Architectural objects and code information.	All		Autodesk Revit 2014*
Civil Model (2D) <i>(Note: 3D BIM model not included.)</i>	Topography, site utilities to within 5 feet of perimeter, hard and soft surfaces, and other site objects.	All		AutoCAD*
Structural Model	Structural steel members, bearing and shear walls, analytical structural model, and lintels.	All		*
Mechanical Model	Mechanical systems, equipment, load information, utilities within 5 feet of building perimeter.	All		Autodesk Revit 2014*
Electrical Model	Electrical systems, equipment, load information, utilities within 5 feet of building perimeter	All		Autodesk Revit 2014*
Plumbing Model	Plumbing systems, equipment, load information, and utilities within 5 feet of building perimeter.	All		Autodesk Revit 2014*
Construction Model	May include scheduling information, sequencing information, costing data, quantity takeoffs, design intent models, and fabrication models information	Construction		Navisworks 2015**

*AutoCAD and Revit software version may be periodically updated to current releases throughout the course of the project.

**Contractor will use Navisworks/BIM 360 Glue as a platform to ‘bind’ all information into a single easy-to-access model. Software version may be periodically updated to current release throughout the course of the project.

C. Model Components

1. File Naming Structure

File Names for Models Should Be Formatted as: <i>DISCIPLINE-Project Number-Building Number.rvt (example: ARCH-20090001-BL001.rvt)</i>	
Technology Model	
Architectural Model	ARCH-2014-208-00-CSI.rvt
Civil Model	CIVIL-2014-208-00-CSI.rvt
Mechanical Model	MECH-2014-208-00-CSI.rvt
Electrical Model	ELECT-2014-208-00-CSI.rvt
Plumbing Model	PLUMB-2014-208-00-CSI.rvt
Food Service Model	KITCHEN-2014-208-00-CSI.rvt (by owner)
Structural Model	STRUCT-2014-208-00-CSI.rvt
Construction Model	CONST-2014-208-00-CSI.nwf/.rvt
Subcontractor Mechanical Model	MECHCONST-2014-208-00-CIS.dwg/nwc/.rvt
Subcontractor Electrical Model	ELECTCONST-2014-208-00-CIS.dwg/nwc/rvt
Subcontractor Plumbing Model	PLUMBCONST-2014-208-00-CIS.dwg/nwc/rvt
Subcontractor Structural Model	STRUCTCONST-2014-208-00-CIS.dwg/nwc/rvt
Subcontractor Curtain Wall Model	CRTNWALLCONST-2014-208-00-CIS.dwg/nwc/rvt

2. Precision and Dimensioning

Models should include all appropriate dimensioning as needed for design intent, analysis, and construction. The model will be considered accurate and complete.

3. Modeling Object Properties

The level of property information in the modeling objects and assemblies depends on the types of analysis that will be performed on the model. See Section IV-A (Analysis Models) for the types of analysis that will be performed.

4. Modeling Level of Detail

The level of detail in the models will be as described in the Minimum Modeling Matrix – Attachment 1.

5. Room Numbering Convention

The rooms shall be numbered as described in the UNMC Room Numbering System

6. Equipment Naming Convention

Equipment shall be named as described in the UNMC Equipment Naming System.

D. Detailed Modeling Plan

1. Criteria Design/Schematic Design Phase

- a. Objectives: Provide spatial design based on input from the conceptualization/program of requirement phase; provide initial design for building system and attributes including architectural, technology, structural, and MEP; identify initial coordination issues between building systems; and receive input from suppliers and fabricators regarding system cost, placement, fabrication and scheduling.
- b. Model Roles: The architectural model will show the general design and layout of the building structure and act as the baseline for all other subsystem designs, such as MEP and structural models. The subsystem designs will be used to show the initial selection and layout of building components. The architectural model and consulting engineers' model will be used to inform the energy models.
- c. Responsibilities: Once the baseline conceptual structure has been created, the architect's model manager will send the model to the sub-consultants so they can develop their designs. The consulting engineers' designated model managers will audit and deliver the completed models to the architect's model manager. The architect's model manager will review the models to ensure compliance with the phase requirements. Once the models meet the requirements, the architect's model manager will link or combine cross-disciplinary models. The architect's model manager should coordinate with the consulting engineers' model managers to eliminate duplicate or redundant objects.

2. Detailed Design/Design Development Phase

- a. Objectives: Provide final design of building and building systems; resolve coordination issues between building systems; and provide a construction model capable of analyzing schedule, cost, and constructability.
- b. Model Roles: The architectural model will continue to act as the baseline for all other subsystem designs. The subsystem designs will be modified accordingly to represent the enhanced design.
- c. Responsibilities: The consulting engineers' and TI's model managers will use the architectural model to revise and complete their designs. Once the models are complete, the consulting engineers' and TI's model managers will deliver their models to the architect's model manager. The architect's model manager will review the models to ensure compliance with the phase requirements. The architect's model manager will provide the construction manager's model manager with the architectural model and the consulting engineers' models.

3. Implementation Documents/Construction Documents Phase

- a. Objectives: Finalize design of the building and all building systems, prepare documentation for agency review, and provide construction modeling that highlights constructability, trade coordination, and fabrication.
 - b. Model Roles: All design models will be used to reflect the design. The models will then be used to generate the contract documents and the construction model. The
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construction model will be used primarily for estimating, scheduling, and constructability analysis.

- c. Responsibilities: The architect's, engineers' and TI's model managers will prepare contract documents for agency review based on the design intent models.

4. Agency Coordination/Bidding Phase

- a. Objective: Revise design intent models based on agency feedback on all models.
- b. Roles: The design models will be adjusted to reflect agency feedback. The construction model will be enhanced and further used for estimating, scheduling, construction sequencing, trade coordination, and constructability analysis.
- c. Responsibilities: The architect's model manager will communicate agency comments back to the design team. The consulting engineers' model managers will revise their design models accordingly and submit them back to the architect. The architect's model manager will provide the contractor's model manager with the architectural model and the AE's and TI's models.

5. Construction

- a. Objectives: Update architectural AE's and TI's models based on submittals, RFIs, or owner-directed changes; maintain the construction model based on construction activities. The construction team will submit RFIs and submittals through the collaborative project management system.
 - b. Model Roles: The architectural, AE's and TI's models will be revised throughout construction, based on owner directives and as-built comments. The models will always reflect the revised contract documents. The construction model will be used for scheduling analysis, construction sequencing, and trade coordination. Throughout the construction, the use of BIM 360 will be utilized to import model data required for the as-built model.
 - c. Responsibilities: The architect's model manager will work with their consulting engineers and TI to answer the RFIs and submittals and adjust the models accordingly. The contractor's model manager will update the construction model and will work with the architect to coordinate the architectural, consulting engineers' and TI's models. The contractor's model manager will coordinate the data input during the construction process for the deliverable as-built model.
 - 1) The HVAC contractor will generate and provide in a timely manner 3D models of the HVAC systems including, but not limited to, ductwork, piping, and all equipment installed in the HVAC scope of work (fans, AHUs, built-up AHU's, pumps, tanks, valves, controls, heat exchangers, smoke and fire dampers, all valves (including valve stems and handles), gauges and control valves, insulation on piping and ductwork, hangers and seismic bracing, diffusers, registers, louvers, grilles, high and low point drains, starters, etc.). The HVAC contractor shall also include in the 3D model concrete equipment pads, inertia pads, and access doors. The HVAC contractor shall identify under separate drawing layer access doors and accessibility requirements for above-listed items for code and maintenance purposes. The HVAC contractor will participate in trade coordination and provide coordination drawings based on the coordinated models. These models shall be updated and maintained to reflect changes in the work as a result of coordination
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or design changes and shall be delivered at the end of the project as an as-built record model of the HVAC system in its entirety.

- 2) The plumbing contractor will generate and provide in a timely manner 3D models of the plumbing systems including, but not limited to, all piping systems, and equipment installed in the plumbing scope of work (domestic water, chilled water, steam, storm/roof leaders, pumps, tanks, water heaters, in-wall carriers, in-wall plumbing equipment, all valves, gauges and control valves, insulation on piping, hangers and seismic bracing, clean-outs, etc.). The plumbing contractor shall also include in the 3D model concrete equipment pads, inertia pads, and access doors. The plumbing contractor shall identify under separate drawing layer access doors and accessibility requirements for above-listed items for code and maintenance purposes. The plumbing contractor will participate in trade coordination and provide coordination drawings based on the coordinated models. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the plumbing in its entirety.
 - 3) The fire suppression system contractor will generate in a timely manner 3D models of the fire suppression systems including, but not limited to, all risers, main and branch piping (including heads), pumps, controllers, ATS, and equipment installed in the fire suppression system scope of work (preaction system, dry system, main fire suppression systems, hangers and seismic bracing, valve assemblies, drain valves, fire department valves, etc.). The fire suppression system contractor shall also include in the 3D model concrete equipment pads, inertia pads, and access doors. The sprinkler contractor shall identify under separate drawing layer access doors and accessibility requirements for above-listed items for code and maintenance purposes. The fire suppression system contractor will participate in trade coordination and provide coordination drawings based on the coordinated models. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the fire suppression system in its entirety.
 - 4) The electrical contractor will generate in a timely manner 3D models of the electrical systems including, but not limited to, all conduit systems and equipment installed in the electrical scope of work (individual conduits over 1", racks carrying more than four conduits 1" and smaller, panels, transformers, switch/paralleling gear, ATSS, generators, cable tray, data racks, starters, VFDs, hangers and seismic bracing, etc. for normal, emergency, and isolated power systems). The electrical contractor shall also include in the 3D model equipment pads, inertia pads, light fixtures, exit signs, outlets, switches fire alarm, speakers, AV equipment, recessed electrical devices, and access doors. The electrical contractor shall identify under separate drawing layer access doors and accessibility requirements for above-listed items for code and maintenance purposes. The electrical contractor will participate in trade coordination and provide coordination drawings based on the coordinated models. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the electrical system in its entirety.
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- 5) The facilities management system contractor (controls) will generate in a timely manner 3D models of the building management systems including, but not limited to, all conduit systems and equipment installed in the facilities management system scope of work (individual conduits over 1", racks carrying more than four conduits 1" and smaller, panels, transformers, controls, cable tray, data racks, starters, VFDs, hangers and seismic bracing, etc.). The facilities management system contractor shall also include in the 3D model concrete equipment pads, inertia pads, and access doors. The controls contractor shall identify under separate drawing layer access doors and accessibility requirements for above-listed items for maintenance purposes. The controls contractor will participate in trade coordination and provide coordination drawings based on the coordinated models. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the control system in its entirety.
- 6) (Make this Item 1?)The structural steel contractor will generate and provide, in a timely manner, a 3D model of their structural scope of work in addition to their contractually required 2D documentation. The 3D model will represent an "as fabricated" fully detailed level of information. The fabrication level detailed model shall include, but is not limited to, major structural members such as trusses, beams, columns, etc., as well as secondary and miscellaneous steel connections including gusset plates, bracing, angles, knife plates, etc. necessary for the successful coordination of other building trades. These models shall be updated and maintained to reflect changes in the work as a result of coordination or design changes and shall be delivered at the end of the project as an as-built record model of the structural steel system in its entirety.

6. Facility Management

- a. Objective: Use the architectural, consulting engineers', Ti's, and construction models for facility management, with the possibility of use in ongoing operations.
- b. ... Model Roles: The architectural, consulting engineers', Ti's and construction models will be used to represent the actual assembly of the building from construction. The models will be linked with information and pdf packages to provide to the owner for the use in ongoing operations.
- c. Responsibilities: The architect will deliver the models at the end of the project to the owner.

4. Analysis Plan

A. Analysis Models

Your project's scope of work may require performing certain kinds of analysis, such as the ones listed below, based on existing or specially created model(s). In most cases, the quality of the analysis depends on the quality of the original model that the analysis is derived from. Therefore, the project team member performing the analysis should clearly communicate the analysis requirements to the original model authoring team member.

1. Quantity Takeoff Analysis

The objective of quantity takeoff analysis is to use modeling property data to automate or simplify the quantity takeoff process. This information from the quantity takeoff tool can then be imported or tied to cost-estimating software. In order for the quantity takeoff process to work seamlessly, the original modeling author will need to include the relevant property information in the design and an agreement of modeled content communities to estimate.

2. Scheduling Analysis

Scheduling analysis lets the project team use the project model to analyze the timeline and sequencing for construction. This information can then be used to modify or adjust the construction schedule. Tools currently exist that allow project team members to visualize the construction over time, but no systems exist yet that interact automatically with scheduling tools.

3. Visualization Analysis

Visualization tools let the project team view the design or construction of the project in 3D, giving them a more accurate perspective of the end product.

4. Structural Analysis

Structural analysis tools use the model to analyze the building's structural properties. Structural analysis programs typically use the Finite Element Method (FEM) to measure the stresses on all structural elements of the design. For structural analysis to work seamlessly, the original structural modeling tool needs to be compatible with the structural analysis tool, and the original structural model property data must include information about the structural elements.

B. Detailed Analysis Plan

Analysis	Analysis Tool	Model	Analyzing Company	Project Phase	File Format Required
Visualization	Revit/3D Rendering	Architectural Model		All	.rvt/.nwf
Structural	Revit	Structural Model		All	.rvt
Quantity Takeoff	Navisworks	All Models		All	.nwf compatible
Scheduling /4D	Navisworks	All Models		All	.nwf compatible
Cost Analysis /5D	Navisworks	All Models		All	.nwf compatible
Daylight/Lighting	TBD	Architectural Model		All	.rvt

C. Clash Detection Process

Clash detection analysis is done to check for interferences between the designs of one or many models. To reduce change orders during construction, clash detection should be performed early and continue throughout the design process. The analysis will continue until ALL clashes are resolved. For clash detection to work properly, your project's models need to have a common reference point and they must be compatible with the clash detection tool.

5. Concurrent As-Built Modeling Plan

As-built modeling will be a collaborative effort between the architect and consultants and the construction team. During the construction process, the design team will incorporate changes triggered by Requests for Information (RFIs), Architect's Supplemental Instructions (ASIs) and change orders into the architectural and consultant models.

Construction team will produce a construction model(s) utilizing the concurrent architectural and subcontractor models. The construction model will be updated throughout construction as required for usage by the construction team (example: coordination, fabrication). During the construction process, the design team will only make modeling changes to significant items identified by shop drawings, coordination drawings, and change orders supplied from the construction team. At the end of construction, both the construction model and the updated architectural and consultant models will be delivered to the owner to be used for facility management.

6. Collaboration Plan – Document Management Solution

A document management solution will be provided by the owner. The document management solution that will be used is called Submittal Exchange. The architect will set up the site and set up all permissions for the site. The site will be maintained from the signing of this document until the occupation of the building.

BIM 360 Field and Glue

BIM 360 Field is a field management tool that will be utilized to create, update, and manage issues, construction documents, QA/QC, safety, punch list, and commissioning. It will be set up by the contractor and will be accessible through an iPad app and web browser.

BIM 360 Glue is cloud-based Autodesk software that operates similar to Navisworks and will be utilized in conjunction with Navisworks to coordinate the building information models amongst the project team. This software will allow the project team to collaborate and coordinate much faster than traditional coordination practices utilizing a data transfer site (example: FTP, Dropbox). The software allows real time and continuous coordination to continue outside of coordination meetings.

BIM360 Glue and Field will be crucial in producing the construction model for the use of facilities management model. Equipment and object data will be input into BIM 360 to be transferred to the corresponding Revit and Navisworks model. This data will be managed by the construction model manager and will be input by the subcontractor model managers. In addition to the direct data input, packaged pdfs will be created containing equipment and object data (submittals, shop drawings, commissioning, closeouts, etc.), these pdfs packages will be linked to the construction model for the use in facilities management. See Attachment 4- Typical Model Attributes.

7. Quality Control

The following checks should be performed to assure quality. Optimal software platform to be determined.

CHECKS	DEFINITION	RESPONSIBLE PARTY	SOFTWARE PROGRAM(S)	FREQUENCY
VISUAL CHECK	Ensure there are no unintended model components and the design intent has been followed		Autodesk Revit	AT EVERY SUBMITTAL
INTERFERENCE CHECK	Detect problems in the model where two building components are clashing including soft and hard		Autodesk Navisworks/BIM360	AT EVERY SUBMITTAL
SUBCONTRACTOR COORDINATION	Detect problems in the model where two building components are clashing including soft and hard		Autodesk Navisworks/BIM360	THROUGHOUT CONSTRUCTION
STANDARDS CHECK	Ensure that the BIM and AEC CADD Standard have been followed (fonts, dimensions, line styles, levels/layers, etc)		Revit and Navisworks	AT EVERY SUBMITTAL
MODEL INTEGRITY CHECKS	Describe the QC validation process used to ensure that the Project Facility Data set has no undefined, incorrectly defined or duplicated elements and the reporting process on non-compliant elements and corrective action plans		Navisworks	AT EVERY SUBMITTAL
VERSION UPDATING CHECK	Ensuring that all users are using the agreed upon version of the software and the method by which changing software version is completed		Version 2014	AT EVERY SUBMITTAL
REVISION AUTHORITY CHECK	Describe the method by which all users will be given access and extent of revision authority to versions of the model as updated.			AT EVERY SUBMITTAL

8. Technological Infrastructure Needs

A. Software

BIM USE	USER	SOFTWARE	VERSION
DESIGN AUTHORING	ARCHITECTURAL	REVIT	2014
DESIGN AUTHORING	STRUCTURAL	REVIT	2014
DESIGN AUTHORING	MECHANICAL	REVIT	2014
DESIGN AUTHORING	ELECTRICAL/TELECOM	REVIT	2014

BIM USE	USER	SOFTWARE	VERSION
DESIGN AUTHORIZING	PLUMBING	REVIT	2014
DESIGN AUTHORIZING	FIRE PROTECTION	REVIT	2014
DESIGN AUTHORIZING	CIVIL	REVIT	2014
DESIGN AUTHORIZING	INTERIOR	REVIT	2014
SCHEDULING (4D)	CONTRACTOR	NAVISWORKS	2014
COST ESTIMATION (5D)	CONTRACTOR	NAVISWORKS	2014
3D COORDINATION	ARCHITECTURE	NAVISWORKS/BIM360	2014
ENERGY ANALYSIS	MEP/ARCHITECTURE	TBD/REVIT	TBD/2014
CODE VALIDATION	ARCHITECTURE	REVIT/WORD	2014/2007
PROGRAMMING	ARCHITECTURE	REVIT/EXCEL	2014/2007
SITE ANALYSIS	CIVIL/ARCHITECTURE	AUTOCAD/REVIT	TBD/2014
3D COORDINATION	CONTRACTOR/SUBCONTRACTORS	NAVISWORKS/BIM 360	2015

B. BIM and CAD Standards

Identify items such as the BIM and CAD graphical, naming, and protocol standards, BIM Workspace version, and the version of IFC, etc.

STANDARD	VERSION
BIM Guidelines and Standards:	Supplied by Owner*
CAD Standard:	Supplied by Owner
COBie (As Applicable)*:	Not Applicable

*COBie integration of data is not included for this project; however, the design team will work with the owner to determine which fields should be included in the BIM families in the design team models for future use by the owner. (See Attachment 4 – Typical Model Attributes for owner-provided typical equipment data requirements). All models to be developed as shown in Attachment 1 – Minimum Modeling Matrix.

9. Project Deliverables

In this section, list the BIM deliverables for the project and the format in which the information will be delivered.

BIM SUBMITTAL ITEM	STAGE	FORMAT	NOTES
The Model, Facility/Site Data, Workspace in the Native Format	ALL	.rvt	Reference-Owner Provided Guidelines and Standards
CAD files in the Native Format	ALL	.dwg, .pdf	Reference Owner-Provided CAD Standards
QA/QC Reports – Model Standards Check Report	ALL	TBD	
QA/QC Reports - Interference Management Checks	ALL	TBD	Navisworks will be Utilized
Interactive Review Format (Autodesk Navisworks, Adobe 3D PDF 7.0 (Or Later)	ALL	TBD	Navisworks will be Utilized

BIM SUBMITTAL ITEM	STAGE	FORMAT	NOTES
List of All Submitted Files (Excel Spreadsheet Preferred) (3.1.3.3)	ALL	.xls	
FM Model	Closeout	.NWD	Navisworks will be Utilized (This Includes PDF Package's Information)
BIM Database	Closeout	All Applicable BIM Formats (.RVT, .DWG etc.)	This will be Utilized by Owner for Future Construction and General FM

DEFINITIONS

LEVEL OF DEVELOPMENT DEFINITIONS (ACCURACY)

The following LOD descriptions identify the specific element requirements for each Model Element.

LOD	Definition
•	Refer to the specific child element for appropriate LOD. (Used for categories that have multiple sub-elements for which varying LOD apply.)
100	Model Elements indicative of area, height, volume, location, and orientation may be modeled in three dimensions or represented by other data. (I.e., a pump would be a cube)
200	Model Elements are modeled as generalized systems or assemblies with approximate quantities, size, shape, location, and orientation. Non-geometric information may also be attached to Model Elements. (I.e., a pump would be a generic pump of approximate size.)
300	Model Elements are modeled as specific assemblies accurate in terms of quantity, size, shape, location, and orientation. Non-geometric information may also be attached to Model Elements. Accurate to the degree dimensioned or indicated on contract documents. (I.e., a pump would be a generic pump of accurate size complete with connections and clearances for a complete system.)

ELEMENT GRADE DEFINITIONS (FORMAT)

Within each Level of Development, there is the potential to represent information in various formats. In

Grade	Description
A	3D + Facility Data
B	2D + Facility Data
C	2D Only (Drafting, linework, text, and or part of an assembly)
+	Original Grade (A, B, or C) adjusted for contract changes and field conditions.
-	Not included in or tied to the model (however is still required in the deliverable)
•	Refer to the specific child element for appropriate Grade. (Used for categories that have multiple sub elements for which varying Grades apply.)

Minimum Modeling Matrix (M3)

Level 01/02 Modeling Requirements

Level 1	<u>A Substructure:</u> All Substructure elements, with necessary intelligence to produce plans, sections, elevations and schedules; including a depiction of expansion/construction joints.
Level 2	<u>A40 Slabs-On-Grade:</u> Slabs-On-Grade shall be depicted with all necessary recesses, curbs, pads, slopes, closure pours, and major penetrations depicted. Slabs shall be developed in the Structural Model and then referenced by the Architectural Model.
Level 1	<u>B Shell:</u> All Shell elements, with necessary intelligence to produce plans, sections elevations, and schedules; including a depiction of expansion/construction joints.
Level 2	<u>B10 Superstructure:</u> All columns, primary and secondary framing members, and bracing for the roof and floor systems (including decks), including all necessary intelligence to produce structural framing plans, related building/wall sections, and schedules. Floor Decks and Slabs for Superstructure shall be developed in the Structural Model and then referenced by the Architectural Model.
Level 2	<u>B20 Exterior Vertical Enclosures:</u> Exterior Vertical Enclosures shall be depicted to the exact height, length, width and ratings (thermal, acoustic, fire) to properly reflect element types. Exterior Windows, Doors and Grilles, Louvers and Vents, Hardware Sets using BHMA designations and Wall Appurtenances shall be depicted to represent their actual size, type and location with the necessary intelligence to produce schedules.
Level 1	<u>C Interiors:</u> The Interiors Model may vary in level of detail for individual elements, All Interior elements shall be depicted exact height, length, width and ratings (thermal, acoustic, fire) to properly reflect element types, with necessary intelligence to produce plans, sections and elevations; including an depiction of expansion/construction joints.
Level 2	<u>C10 Interior Windows, Doors, Louvers and Vents, Interior Specialties:</u> Interior Finishes shall be included in the Facility Data of the host element with the necessary intelligence to produce schedules where applicable. Interior Windows, Doors and Grilles, Louvers and Vents, Hardware Sets using BHMA designations and Wall Appurtenances shall be depicted to represent their actual size, type and location with the necessary intelligence to produce schedules.
Level 2	<u>C20 Interior Finishes:</u> Interior Finishes shall be included in the Facility Data of the host element with the necessary intelligence to produce schedules.

Level 1	<p><u>D Services:</u> All necessary Services elements including all major openings and penetrations, cable trays, cable bundles and pipe grouping (3/4" Ø and larger) shall be depicted with necessary intelligence to produce plans, sections, elevations and schedules where applicable. All clearances and insulation shall be accounted for in the model for use in interference management and maintenance access requirements. Nonpermanent items are not required to be modeled or contain facility data.</p>
Level 2	<p><u>D20 Plumbing:</u> All Plumbing Elements including plumbing piping and fixture layouts, floor and area drains, and related equipment, including necessary intelligence to produce riser diagrams, and schedules where applicable. Small diameter (less than 3/4" NPS) field-routed piping is not required to be depicted in the Model. All gravity and insulated piping shall be modeled.</p>
Level 2	<p><u>D30 Heating, Ventilation, and Air Conditioning HVAC:</u> All Heating, Ventilation, and Air Conditioning (HVAC) elements including piping, fixture layouts and related equipment with necessary intelligence to produce riser diagrams, and schedules where applicable. Small diameter (less than 3/4" NPS) field-routed piping is not required to be depicted in the Model. All gravity and insulated piping shall be modeled.</p>
Level 2	<p><u>D40 Fire Protection:</u> All Fire Protection elements including all piping, valves, and seismic bracing shall be modeled with necessary intelligence to produce plans, elevations, building/wall sections, riser diagrams, and schedules where applicable.</p>
Level 2	<p><u>D50 Electrical:</u> All Electrical elements including conduit, fixture layouts and related equipment (including power for systems furniture) with necessary intelligence to produce schedules where applicable. Small diameter (less than 3/4" Ø) field-routed conduit is not required to be depicted in the Model.</p>
Level 2	<p><u>D60 Communications:</u> All existing and new Communications elements, both above ground and underground, with necessary intelligence to produce schedules where applicable. Small diameter (less than 3/4" Ø) field-routed conduit is not required to be depicted in the Model.</p>
Level 2	<p><u>D70 Electronic Safety and Security:</u> All Electronic Safety and Security elements with necessary intelligence to produce schedules. Small diameter (less than 3/4" Ø) field-routed conduit is not required to be depicted in the Model.</p>
Level 2	<p><u>D80 Integrated Automation:</u> All Integrated Automation elements with necessary intelligence to produce schedules. Small diameter (less than 3/4" Ø) field-routed conduit is not required to be depicted in the Model.</p>

Level 1	<p><u>E Equipment and Furnishings:</u> All Equipment and Furnishings elements shall be depicted with necessary intelligence to produce plans, sections, elevations and schedules, indicating the configuration, materials, finishes, mechanical, and electrical requirements. Representation of Movable Equipment and Furnishing elements shall be 2D with Facility Data. Contractor shall provide a minimal number of 3D representations as examples. Examples of Movable Equipment and Furnishings include, but are not limited to, desks, desktop printer, desktop computer, furniture systems, seating, tables, and office storage.</p>
Level 2	<p><u>E10 Equipment:</u> Equipment that make use of electrical, data or other features shall include the necessary intelligence to produce coordinated documents, data, and schedules where applicable.</p>
Level 2	<p><u>E20 Furnishings:</u> Fixed Furnishings that make use of electrical, data or other features shall include the necessary intelligence to produce coordinated documents, data, and schedules where applicable.</p>
Level 1	<p><u>F Special Construction and Demolition:</u> All Special Construction and Demolition elements shall be depicted with necessary intelligence to produce plans, sections and elevations.</p>
Level 1	<p><u>G Sitework:</u> All Sitework (DTM) elements shall be depicted with necessary intelligence to produce Project site, topographical plans, cross sections and profiles. All clearances shall be accounted for in the model for use in interference management and maintenance access requirements.</p>
Level 2	<p><u>G30 Liquid and Gas Site Utilities:</u> All Liquid and Gas Site Utilities elements with necessary intelligence to produce schedules where applicable. Small diameter (less than 3/4" Ø) field-routed piping and conduit is not required to be depicted in the Model.</p>
Level 2	<p><u>G40 Electrical Site Improvements:</u> All Electrical Site Improvements including all lighting fixtures, relevant existing and proposed support utility lines and equipment with necessary intelligence to produce details and schedules where applicable.</p>

Minimum Modeling Matrix

Level	Element ID	Unit/Format ID	Included in Facility or Site? (Change to NO if NOT part of project event)	LOD	DESIGN MODEL (CONSTRUCTION DOCUMENTS)	RECORD MODEL (AS-BUILTS)	Primary Discipline (This will allow design team to identify discipline specific areas of contact)	Notes
					GRADE (CD)	GRADE (AB)		
Level 1	24101-Foundation	A	Yes	+	+	+	Structural	
Level 2	Foundation	A10	Yes	+	+	+	Structural	
Level 3	Standard Foundations	A1010	Yes	+	+	+	Structural	
Level 4	Wall Foundations	A1010.10	Yes	300	A	A+	Structural	
Level 4	Column Foundations	A1010.30	Yes	300	A	A+	Structural	
Level 4	Standard Foundation Supplementary Components	A1010.90	Yes	200	C	C+	Structural	
Level 2	Special Foundations	A1020	Yes	+	+	+	Structural	
Level 4	Driven Piles	A1020.10	Yes	300	A	A+	Structural	
Level 4	Bored Piles	A1020.15	Yes	300	A	A+	Structural	
Level 4	Caissons	A1020.20	Yes	300	A	A+	Structural	
Level 4	Special Foundation Walls	A1020.30	Yes	300	A	A+	Structural	
Level 4	Foundation Anchors	A1020.40	Yes	300	C	C+	Structural	
Level 4	Underpinning	A1020.50	Yes	300	C	C+	Structural	
Level 4	Raft Foundations	A1020.60	Yes	300	A	A+	Structural	
Level 4	Pile Caps	A1020.70	Yes	300	A	A+	Structural	
Level 4	Grade Beams	A1020.80	Yes	300	A	A+	Structural	
Level 2	Subgrade Enclosures	A20	Yes	+	+	+	Architectural, Structural	
Level 3	Walls for Subgrade Enclosures	A2010	Yes	+	+	+	Architectural, Structural	
Level 4	Subgrade Enclosure Wall Construction	A2010.10	Yes	300	A	A+	Architectural, Structural	
Level 4	Subgrade Enclosure Wall Interior S&I	A2010.20	Yes	300	A	A+	Architectural	
Level 4	Subgrade Enclosure Wall Supplementary Components	A2010.90	Yes	200	C	C+	Architectural, Structural	
Level 2	Slabs-on-Grade	A30	Yes	+	+	+	Structural	
Level 3	Standard Slabs-on-Grade	A3010	Yes	300	A	A+	Structural	
Level 3	Structural Slabs-on-Grade	A3020	Yes	300	A	A+	Structural	
Level 3	Slab Trenches	A3030	Yes	300	A	A+	Architectural, Structural	
Level 3	Piz and Beams	A3040	Yes	300	A	A+	Architectural, Electrical, Equipment, Fire Protection, Mechanical (HVAC), Plumbing, Structural	
Level 3	Slab-On-Grade Supplementary Components	A3040	Yes	+	+	+	Structural	
Level 4	Perimeter Insulation	A3040.10	Yes	300	A	A+	Architectural	
Level 4	Vapor Retarder	A3040.20	Yes	300	C	C+	Architectural	
Level 4	Membrane	A3040.30	Yes	300	C	C+	Architectural	
Level 4	Mud Slab	A3040.50	Yes	300	A	A+	Structural	
Level 4	Subbase Layer	A3040.60	Yes	300	A	A+	Structural	
Level 2	Water and Gas Mitigation	A40	Yes	+	+	+	Plumbing, Specialty Consultants	
Level 3	Building Subdrainage	A4010	Yes	+	+	+	Plumbing	
Level 4	Foundation Drainage	A4010.10	Yes	200	B	B+	Plumbing	
Level 4	Underlab Drainage	A4010.20	Yes	300	A	A+	Plumbing	
Level 3	Off-Gas Mitigation	A4020	Yes	+	+	+	Plumbing	
Level 4	Radon Mitigation	A4020.10	Yes	300	C	C+	Plumbing	
Level 4	Methane Mitigation	A4020.50	Yes	300	C	C+	Plumbing	
Level 2	Substructure Related Activities	A50	Yes	+	+	+	Structural	
Level 3	Substructure Excavation	A5010	Yes	+	+	+	Civil Structural	
Level 4	Backfill and Compaction	A5010.10	Yes	200	C	C+	Structural	
Level 3	Construction Dewatering	A5020	Yes	200	C	C+	Civil, Specialty Consultants	
Level 3	Excavation Support	A5030	Yes	+	+	+	Specialty Consultants	
Level 4	Anchor Ties/backs	A5030.10	Yes	300	C	C+	Specialty Consultants	
Level 4	Cofferdams	A5030.20	Yes	300	C	C+	Architectural, Specialty Consultants	
Level 4	Cribbing and Waters	A5030.40	Yes	300	C	C+	Specialty Consultants	
Level 4	Ground Freezing	A5030.60	Yes	300	C	C+	Specialty Consultants	
Level 4	Slurry Walls	A5030.70	Yes	300	C	C+	Specialty Consultants	
Level 4	Soil Treatment	A5040	Yes	300	C	C+	Specialty Consultants	
Level 1	SI&I	B	Yes	+	+	+	Architectural, Structural	
Level 2	Superstructure	B10	Yes	+	+	+	Architectural, Structural	
Level 3	Floor Construction	B1010	Yes	+	+	+	Architectural, Structural	
Level 4	Floor Structural Frame	B1010.10	Yes	300	A	A+	Structural	
Level 4	Floor decks, slabs and topping	B1010.20	Yes	300	A	A+	Structural	
Level 4	Balcony Floor Construction	B1010.30	Yes	300	A	A+	Structural	
Level 4	Mechanical Floor Construction	B1010.40	Yes	300	A	A+	Structural	
Level 4	Ramps	B1010.50	Yes	300	A	A+	Structural	
Level 4	Floor Construction Supplementary Components	B1010.90	Yes	200	C	C+	Architectural, Structural	
Level 3	Roof Construction	B1020	Yes	+	+	+	Architectural, Structural	
Level 4	Roof Structural Frame	B1020.10	Yes	300	A	A+	Structural	
Level 4	Roof decks, slabs and sheathing	B1020.20	Yes	300	A	A+	Architectural, Structural	
Level 4	Canopy Construction	B1020.30	Yes	300	A	A+	Architectural, Structural	
Level 4	Roof Construction Supplementary Components	B1020.90	Yes	200	C	C+	Architectural, Structural	
Level 3	Stairs	B1030	Yes	+	+	+	Architectural	
Level 4	Stair Construction	B1030.10	Yes	300	A	A+	Architectural, Structural	
Level 4	Stair soffits	B1030.20	Yes	300	A	A+	Architectural	
Level 4	Stair Railings	B1030.30	Yes	300	A	A+	Architectural	
Level 4	Fire Escapes	B1030.60	Yes	300	A	A+	Architectural	
Level 4	Metal Walkways	B1030.70	Yes	300	A	A+	Architectural	
Level 4	Ladders	B1030.80	Yes	300	A	A+	Architectural	
Level 3	Exterior Wall Construction	B1040	Yes	+	+	+	Architectural	
Level 4	Exterior Wall Veneer	B1040.10	Yes	300	A	A+	Architectural	
Level 4	Exterior Wall Construction	B1040.20	Yes	300	A	A+	Architectural	
Level 4	Exterior Wall Interior Skin	B1040.30	Yes	300	A	A+	Architectural	
Level 4	Fabricated Exterior Wall Assemblies	B1040.40	Yes	300	A	A+	Architectural	
Level 4	Parapets	B1040.50	Yes	300	A	A+	Architectural	
Level 4	Equipment Screens	B1040.60	Yes	300	A	A+	Architectural	
Level 4	Exterior Wall Supplementary Components	B1040.90	Yes	300	C	C+	Architectural, Structural	
Level 4	Exterior Wall Opening Supplementary Components	B1040.90	Yes	300	C	C+	Architectural	
Level 3	Exterior Windows	B20	Yes	+	+	+	Architectural	
Level 4	Exterior Operating Windows	B2010	Yes	300	A	A+	Architectural	
Level 4	Exterior Fixed Windows	B2020	Yes	300	A	A+	Architectural	
Level 4	Exterior Window Wall	B2030	Yes	300	A	A+	Architectural	
Level 4	Exterior Special Function Windows	B2040	Yes	300	A	A+	Architectural	
Level 3	Exterior Doors and Gates	B30	Yes	+	+	+	Architectural	
Level 4	Exterior Entrance Doors	B3010	Yes	300	A	A+	Architectural	
Level 4	Exterior Utility Doors	B3020	Yes	300	A	A+	Architectural	
Level 4	Exterior Overhead Doors	B3030	Yes	300	A	A+	Architectural	
Level 4	Exterior Special Function Doors	B3040	Yes	300	A	A+	Architectural	
Level 4	Exterior Gates	B3050	Yes	300	A	A+	Architectural	
Level 4	Exterior Gates	B3060	Yes	300	A	A+	Architectural	
Level 4	Exterior Door Supplementary Components	B3070	Yes	300	C	C+	Architectural	
Level 3	Exterior Louvers and Vents	B40	Yes	+	+	+	Architectural	
Level 4	Exterior Louvers	B4010	Yes	300	A	A+	Architectural	
Level 4	Exterior Vents	B4020	Yes	300	A	A+	Architectural	

EXHIBIT D
GUARANTEED MAXIMUM PRICE (GMP) AGREEMENT

Amendment No. 1 to Agreement
Between Owner and Technology Integrator

Pursuant to Paragraph 7.8 of the Agreement, dated between **The Board of Regents of the University of Nebraska**, and _____, the Owner and TI establish a Guaranteed Maximum Price and Contract Time for the Work as set forth below.

ARTICLE 1
GUARANTEED MAXIMUM PRICE

The Construction Manager's Guaranteed Maximum Price for the Contract Price is _____.

This Price is for the performance of the Services in accordance with the Contract Documents listed and attached to this Amendment and marked Exhibits A through F, as follows:

Exhibit A.1 ___% GMP Drawing – [Date]

Exhibit A.2 ___% GMP Specifications - [Date]

Exhibit A.3 ___% GMP Drawings - [Date]

Exhibit A.4 ___% GMP Specifications - [Date]

Exhibit B [Assumptions and clarifications made in preparing the Guaranteed Maximum Price, page ___, and dated _____]

Exhibit C [Allowance items, page ___, and dated _____]

Exhibit D [Completion schedule, page ___, and dated _____]

Exhibit E [Change Request, ___% GMP Documents, Identified and Accepted Value Engineering - Deductions Items ___ and Additions items ___ page ___, dated _____]

Exhibit F [Established Substantial Completion Date _____ – as stated in schedule pages _____ of GMP Proposal]

ARTICLE II
CONTRACT TIME

The date of Substantial Completion established by this Amendment is: [_____]

TECHNOLOGY INTEGRATOR PORTION

Signature

CERTIFIED COPY OF RESOLUTION

BE IT RESOLVED, that the following named individuals, and each of them, are hereby authorized as employees of _____ to execute in its behalf all contracts, agreements and releases which they, in their discretion, approve, each such employee being separately and independently authorized to so act without the concurrence or joinder in such action by and of the other named employees:

BE IT FURTHER RESOLVED, that any such contract, agreement or release executed by any of the above-name employees in the name of _____ should be considered a contract, agreement, or release of _____ and shall be binding upon it.

BE IT FURTHER RESOLVED, that any similar authority heretofore granted by the Board of Directors of the Company to employees other than those named above be and hereby is terminated as of this date, and the authority granted above shall commence this date and shall continue until revoked by resolution of the Board of Directors.

I hereby certify that I am Secretary of _____, that as such I have access to the books and records of the Corporation; that the foregoing is an excerpt from the minutes of the Board of Directors' Meeting of _____ a _____, held on the _____ day of _____, 20____, a quorum being present; and that no action has been taken by the Board of Directors of said Corporation since said date that would have effect of changing or altering the authority granted therein.

Subscribed and sworn to before me this _____ day of _____, 20_____.

Notary Public

Secretary of the Corporation

Seal:

Date _____
