

## CM/GC SCOPE OF WORK

### 0.0 GENERAL INFORMATION

0.1. The CM/GC must provide two sets of services, which are summarized below:

0.1.1. **Phase 1 Services** as defined further in the Subcontract and the incorporated documents (including this document) includes construction management, pre-construction services that will be performed during the design and bidding period (“Phase 1 Services”) and

0.1.2. **Phase 2 Services** as defined further in the Subcontract and the incorporated documents (including this document) includes general contractor services that will be performed during the construction period (“Phase 2 Services”). The University reserves the right in its sole discretion to award the **Phase 2 Services**.

### 1.0 CM/GC GENERAL PROJECT PROVISIONS

1.1. Staffing: The CM/GC shall provide a Project Manager for the Work with the authority to commit resources of the firm to monitor, manage and administer all phases of the Project activities and to help achieve the completion of all **Phase 1 and Phase 2 Services**. CM/GC shall provide all necessary qualified personnel to perform CM/GC services under this Subcontract. If the CM/GC's personnel fail to perform to the University's satisfaction, the University may, upon 15-day written notice, require the CM/GC to remove such person(s) from the project and replace them with personnel acceptable to the University.

### 2.0 PHASE 1 SERVICES

2.1. This CM/GC contract effort is to coincide with the design portion of the project. Upon University's written Notice to Proceed, CM/GC shall commence the services listed in this document (as incorporated into the Subcontract).

#### 2.2. CM/GC PRE-CONSTRUCTION SERVICE

2.2.1. The CM/GC will attend regularly scheduled weekly meetings with LBNL project personnel and the Architect-Engineer. CM/GC shall participate in the evaluation of the design and proposed design alternatives, including constructability reviews, provide detailed cost estimates and schedules at each of the design submittals.

2.2.2. Preconstruction services shall include:

- Constructability reviews of 100% Design Development Documents, 90% and 100% Construction Documents
- Detailed estimate and preliminary schedule at 100% Design Development
- Detailed estimate and construction schedule at 90% and 100% Construction Documents
- Development of site logistics plan (including equipment delivery and installation)
- Preliminary energization plan to be incorporated into trade contractor bid packages
- Prequalification of trade contractors
- Development of bid packages for each trade contractor.
- Incremental funding schedule analysis
- Estimates for potential scope additions noted in the Project Description

2.2.3. The CM/GC will provide other services that are reasonable and necessary to assist the University in the maintenance of the project scope, schedule, and budget.

2.2.4. All work will be performed within an operating facility. Constructability reviews and construction schedules shall include considerations for minimizing building system down time and operational impacts.

2.2.5. The University anticipates incremental funding for this project; funding for **Phase 2 Services** is not currently available. As part of the preconstruction service, incremental funding analysis, the CM/GC shall advise the Laboratory of funding requirements to assure the construction is executed as cost effectively as possible.

2.2.6. The CM/GC will provide site logistic and energization planning, prequalification of trade contractors and other services that are reasonable and necessary to assist the University in the maintenance of the project scope, budget and schedule.

2.2.7. CM/GC, its officers, agents, employees, lower tier subcontractors, consultants and any persons or entities for whom CM/GC is responsible, shall provide all services pursuant to the Subcontract in a manner consistent with the standard of care under California law applicable to those who specialize in providing such services for projects of the type, scope, and complexity of this Project.

### 2.3. ESTIMATING/VALUE ENGINEERING/SCHEDULING

2.3.1. Within three weeks of the completion of each design submittal by the A/E, the CM/GC shall prepare and submit for University approval, a detailed written Project Construction Cost Estimate (separate estimates for **Task A** - Facilities Enhancements and **Task B** - Site Preparation). CM/GC shall meet with the A/E and the LBNL Project Manager to reconcile discrepancies between its estimate and the A/E estimate. The estimate shall be based on detailed quantity takeoffs of the design Drawings and Specifications.

2.3.2. Each estimate shall include the incremental cost for potential scope additions as defined in the CM/GC Request for Proposal. The CM/GC shall obtain the LBNL Project Manager's written approval of estimate format and structure prior to proceeding with estimate.

2.3.3. At the 100% Design Development submittals, the CM/GC will participate in a value engineering (VE) study identifying VE opportunities where the value to the customer could be improved and provide estimates of the cost and schedule impacts if the opportunity were to be accepted. The study shall consist of a one day workshop with the A/E, A/E estimator and pertinent members from the CM/GC team to identify VE opportunities, then off-line evaluation of the opportunities and a one day meeting to evaluate and decide which of the VE opportunities will be accepted.

2.3.4. Within two weeks of the completion of each design submittal by the A/E, the CM/GC shall prepare a comprehensive Critical Path Method (CPM) schedule, showing all project related construction activities. Refer to section 13216 Construction Progress Schedule for Earned Value Management (EVM) and cost loaded schedule requirements.

2.3.5. This project is funded by the Department of Energy and is to be funded incrementally on an annual basis. The CPM schedule will take into consideration projected annual funding increments.

2.3.6. The CPM shall have the capability to filter by lower tier subcontractor to illustrate each lower tier subcontractor's planned construction sequence and interface with other lower tier subcontractors. The CPM shall also identify the proposed Bid Packages the CM/GC recommends as appropriate to complete the work in accordance with the Subcontract Time. The CM/GC shall cost load the schedule with the reconciled cost estimate and produce a monthly budgeted cost of the construction work.

#### 2.4. CM/GC DESIGN COORDINATION SERVICES

2.4.1. Prior to bidding and based on projected bid market conditions, the CM/GC shall recommend in writing to the LBNL Project Manager the percentage of bid contingency to carry for each Bid Package in the University's budget.

2.4.2. CM/GC shall schedule and conduct a constructability review, based on 100% Design Development and 90% and 100% Construction design submissions.

2.4.3. At the same time the CM/GC performs cost estimates as called for by this Scope of Work, it shall conduct reviews to determine and identify items that the CM/GC feels, in its professional opinion, could lead to a higher cost of bids for the Bid Packages; and/or change orders resulting from ambiguities, coordination of Design Work for various trades, errors, and/or omissions in the Subcontract prepared during the Design Work by the A/E. The CM/GC shall present its results in a written report to the LBNL Project Manager; and meet with both the LBNL Project Manager and the A/E to present and explain its findings.

#### 2.5. SITE INVESTIGATION

2.5.1. The CM/GC shall perform an investigation of the project site to confirm existing conditions.

#### 2.6. LOGISTICS PLAN, ENERGIZATION PLAN AND TEMPORARY ACCESS PLAN

2.6.1. The CM/GC shall complete a Logistics Plan, Electrical Energization Plan, Temporary Access Plan, and a Bid Package Plan that will be utilized as bid documents when bidding the subcontracts.

2.6.2. The Logistics Plan will include site access, badging requirements, parking plan, staging plan, temporary power details, training requirements, safety requirements and trailer layout. The CM/GC will work with the AE to provide information to be presented in the construction document drawings. The written portions of the plan shall be produced by the CM/GC to provide guidance to the subcontractors. This will be issued to the subcontractors as part of the bid package and can be incorporated into the "Instruction to Bidders" that is also developed by the CM/GC.

2.6.3. Within 45 calendar days after receipt of the 100% Design Development Design submittal, the CM/GC shall prepare an Energization Plan for University review and approval. The energization plan shall comply with the energization process as defined in section 013500 Special Procedures. The plan shall include anticipated energization events and a sequence that will minimize the amount of unfinished work at each energization and minimize the use of LOTO's to control electrical hazards. The CM/GC shall incorporate the details of this plan into the CPM schedule, update the plan at the issuance of the Construction Drawing package as necessary and include the final version in trade contractor bid packages.

2.6.4. The CMGC will work with the AE to coordinate the energization plan with the design. The final design shall consider maintainability of systems including minimizing operational impacts during routine maintenance.

2.6.5. The Temporary Access Plan shall include any crane, scaffolding, ingress, egress, and temporary stairs requirements. Temporary Access and temporary weather protection are difficult to estimate at this time so they shall not be included in the Phase 2 Option Price. At the time of the 90% Construction Document design submittal, the CM/GC shall prepare and submit to the University for approval the Temporary Access Plan that identifies how the CM/CG plans to provide these requirements and any other items required for a complete buy out of the project.

## 2.7. LEAN CONSTRUCTION

2.7.1. The University seeks to integrate Lean Construction techniques into the construction of the the NERSC 9 Facility Upgrade. Specification section 013500 Special Procedures paragraph 3.3 Temporary Facilities includes the requirement for a "Big Room" to be provided for collocation of the CM/GC, pertinent subcontractors, A/E and owner staff at the project site for collaboration and expedited resolution of project issues. The University is interested in the CM/GC recommendations for additional Lean Construction techniques such as (but not limited to) Last Planner System, Pull Planning and Modular off-site pre-fabrication.

## 2.8. BUILDING INFORMATION MODELING (BIM) COORDINATION

2.8.1. The CM/GC shall participate in the clash detection exercises and provide input for the resolution of the clashes.

2.8.2. The CM/GC shall participate in the BIM coordination meetings and shall ensure that the design progress will provide a complete and effective development of the BIM model for utilization during the construction. Once complete the CM/GC shall accept the 100% Construction Document BIM model from the A/E and then maintain the model through the completion of construction in accordance with the requirements in specification 013514 Project Special Procedures - BIM Requirements.

## 2.9. BID SERVICES

2.9.1. The CM/GC shall be responsible, for sequencing, assembly, scope definition and preparation of Bid Packages and all cover information for individual packages to assure that all items as indicated in Subcontract, including coordination of details and Subcontractor required General Conditions Work are included with bid documents. The CM/GC shall not create or permit duplication of work between Bid Packages and/or General Conditions through scope descriptions, or by any other means. The CM/GC shall analyze the Bid Packages, identify elements of uncertainty or risk prior to the bidding, endeavor to eliminate conflicts, duplications and omissions and mitigate the University's exposure to bidding error through instructions to bidders.

2.9.2. At least 30 days prior to preparing and assembling the Bid Packages, the CM/Contractor shall submit pro forma Bidding Documents to the University for review and approval. This submittal shall include the CM/Contractor's proposed Instructions to Bidders, Bid Form, Terms and Conditions including all required flow downs and all other proposed Bidding Documents except Drawings and Specifications Divisions 2 and above.

2.9.3. The CM/GC shall assemble Bid Packages in a complete, coordinated and most cost-effective manner for the University. CM/GC shall obtain all necessary design documents from the LBNL Project Manager. The CM/GC will arrange for printing, binding, wrapping and delivery to the bidders, and shall maintain a list of bidders receiving the Bid Documents.

2.9.4. The CM/GC shall review, recommend, develop and estimate allowances, alternates, unit prices and other requirements for inclusion in the Bid Packages. The cost of lower tier subcontractor payment or performance bond, or insurance purchased in lieu there of, if any, will not be included by University in Subcontract Modifications for Bid Package(s).

2.9.5. The CM/GC shall develop lists of possible bidders to solicit bids for the Bid Package(s), provide pre-bid lower tier subcontractor prequalification criteria, and conduct prequalification of lower tier subcontractors. The CM/GC shall conduct an outreach effort to attract broad interest among qualified bidders. The CM/GC shall contact potential bidders to develop a sufficient pool of bidders. The CM/GC shall secure commitments to bid from a minimum of four bidders for each Bid Package unless the CM/GC, with the concurrence of the University, is unable to qualify 4 sources. One or more of these bidders shall be certified as a small business, to the extent possible. The University acknowledges that there may be instances in which no small businesses will be qualified for certain work. CM/GC shall submit the bidders list and all bid packages and bid instructions to the University for

approval at least two weeks prior to issuing the Bid Packages. As required by the General Provisions, the LBNL Project Manager will review all Bid Packages and issue a Letter of Bid Package Review. Such review will confirm that CM/GC has complied with the provisions of this section. CM/GC shall make any changes to Bid Packages and Bidders Lists as requested by University.

2.9.6. The CM/GC shall, as directed by the LBNL Project Manager, respond to bid questions during the bid period and at pre-bid conferences, pre-construction conferences and walk-throughs.

2.9.7. The CM/GC shall evaluate the bids received in detail for technical deficiencies. The CM/GC shall analyze the bid results for potential error, review the apparent low bids for responsiveness and compliance with this Subcontract, and shall recommend award or other action. The CM/GC shall determine if potential bidder(s) are not responsible or if bid(s) are non-responsive; CM/GC shall provide a debriefing of its recommendation regarding bidder(s)/bid(s) and provide Bid Package Certification to the University. The CM/GC shall review the bid results for such bidding climate issues as bid responsiveness, adequacy in the number of bidders and the spreading or grouping of bid results. CM/GC shall make recommendations as to which additive alternatives to award.

2.9.8. The CM/GC shall record bids received. The CM/GC shall prepare spreadsheet analyses indicating all bids received and comparing the lowest responsible bid price with the cost estimate for that Bid Package.

2.9.9. The CM/GC shall prepare and submit an Injury and Illness Prevention Plan (IIPP), a Site Specific Safety Plan, and Job Hazard Analyses for all components of the work to the University for review and approval 90 days before any construction is scheduled to begin.

### **3.0 PHASE 2 SERVICES (UNIVERSITY'S OPTION)**

#### **3.1. GENERAL**

3.1.1. The CM/GC shall provide all materials, labor, and services required to construct the work as described in the Subcontract. The Subcontract Sum will be adjusted by Subcontract Modification after each Bid Package in the **Phase 1 Services** has been bid, certified by the CM/GC and approved by the University. The University may elect to hold and issue all or several bid packages in a single unilateral Subcontract Modification.

#### **3.2. GENERAL CONDITIONS WORK**

3.2.1. The CM/GC shall provide all items identified in this section, in Section 010000 General Requirements, Section 013216 Construction Progress Schedule, Section 013500 Special Procedures, 013514 BIM Requirements, Section 013529 Environmental, Safety, and Health Procedures, Section 017419 Construction Waste Management, Section 017900 Demonstration and Training, and Section 019113 General Commissioning Requirements during the **Phase 2 Services**. In addition, the CM/GC shall provide all other items required by the Subcontract and any other General Conditions work items, required to complete the **Phase 2 Services**.

3.2.1.1. The CM/GC may include the cost of temporary construction items listed in the Specifications, Paragraph 3.02 of Section 013500, Special Procedures, in lower tier subcontractor bid packages as part of the cost of the work, instead of in the CM/GC's prices for **Phase 2 Services**. Any additional items the CM/GC plans to exclude should be noted in the CM/GC's proposal.

3.2.1.2. All other temporary facilities must be included in the CM/GC's price for **Phase 2 Services**.

#### **3.3. MEETINGS**

3.3.1. The CM/GC will meet with the University weekly throughout the project and prepare meeting minutes. Agenda items will include:

- Review of meeting minutes and action items.

- Current construction schedule including three week look ahead schedule.
- Safety issues and Job Hazard Analyses.
- Requests for information and submittals

### 3.4. PERSONNEL

#### 3.4.1. FIELD STAFF

3.4.1.1. The CM/GC shall include at a minimum the following staffing levels during construction of **Task A** Facilities Enhancements;

- Project Executive – part time
- Project Manager – full time
- Project Engineer – full time
- Construction Superintendent – full time
- Safety Professional – full time when work is ongoing
- Energization/Commissioning coordinator – part time
- Scheduler – part time
- Estimator – part time

3.4.1.2. The Laboratory anticipates the offeror's staffing requirements for positions listed above would be reduced during the construction of **Task B** Site Preparation. The CM/GC shall evaluate the **Task B** project requirements and provide Field Personnel throughout the project duration that the CM/GC determines to be necessary to successfully manage, implement, and supervise the Work. The Field Staff levels must at all times meet the requirements of the Contract Documents. The CM/GC shall provide the University with a review of Field Staff requirements and submit recommendations for which personnel (title/function), quantities, and % of full-time would be appropriate for the NERSC 9 Facility Upgrade Project.

#### 3.4.2. OFFICE STAFF

3.4.2.1. Provide all necessary effort and staff to supplement the CM/GC's Field Personnel.

### 3.5. JOB SITE OFFICE(S)

3.5.1. In addition to those requirements set forth in the Subcontract, CM/GC shall include in its **Phase 2 Services** all Field Office expenses, such as installation and maintenance of a construction trailer or office, portable toilets, office furniture, equipment and office supplies.

### 3.6. TEMPORARY CONSTRUCTION

3.6.1. Provide all Temporary Construction items listed in Section 013500 Special Procedures throughout the duration of the Project as the Work requires, for the benefit of the Project and the CM/GC's lower tier subcontractors.

3.6.2. Provide all Temporary Facilities listed in Section 013500 Special Procedures throughout the Project as the Work requires, for the benefit of the Project and the CM/GC's lower tier subcontractors.

### 3.7. SAFETY

3.7.1. The CM/GC shall be responsible for job site safety and shall follow all applicable laws and Specifications, and furnish all items specified in CM/GC Provided General Conditions to lower tier subcontractors for the construction work associated with the **Phase 2 Services** for the duration of the work for the benefit of the Project and the CM/GC's lower tier subcontractors.

3.7.2. Safety signage throughout Project.

3.7.3. Personal protective gear for CM/GC's personnel and job site visitors.

3.7.4. Safety requirements are outlined in Specification Section 013529.

3.7.5. Provide and maintain a project safety program, including a Site Specific Safety Plan, an Injury and Illness Prevention Plan (IIPP), and Job Hazard Analyses for all aspects of the project work. The CM/GC will set up requirements and monitor the lower tier subcontractor safety programs.

3.7.6. The CM/GC shall submit a monthly report to the LBNL Project Manager pertaining to safety progress on the project. The report shall include as a minimum a log of all safety meetings, a list of safety deficiencies, the resolution and number of days taken to resolve, the number of days without a lost workday incident and total number of man hours worked without a lost workday incident.

### 3.8. TEMPORARY PROTECTION

3.8.1. Note that temporary protection shall be excluded from the **Phase 2 Option Price** but included in a Bid Package Plan as noted in paragraph 2.7.5 of this Scope of Work document.

### 3.9. TEMPORARY UTILITIES

3.9.1. Provide all Temporary Utilities items listed in Section 013500 Special Procedures, throughout the Project as the Work requires, for the benefit of the Project and the CM/GC's lower tier subcontractors. Temporary Utilities shall include all labor and materials for hook-up and disconnection, relocation as the Work requires.

### 3.10. CONSTRUCTION EQUIPMENT

3.10.1. Provide all Construction Equipment throughout the Project as the Work requires, for the benefit of the Project and the CM/GC's lower tier subcontractors. Construction Equipment shall include all labor and materials for mobilizing and demobilizing, maintaining, storing, rental, usage, and operating cost.

### 3.11. MATERIAL HANDLING & HOISTING

3.11.1. Provide all Material Handling & Hoisting items throughout the Project as the Work requires, for the benefit of the Project and the CM/GC's lower tier subcontractors. Material Handling & Hoisting shall include all labor and materials for mobilizing and demobilizing, maintaining, storing, rental, usage, and operating cost. Provide cranes/forklifts as required to offload equipment and maintain the staging/laydown areas.

### 3.12. CLEAN UP

3.12.1. CM/GC to be responsible for all clean up. Work in the computer room shall maintain a level of cleanliness comparable to the existing conditions, ISO Class 8 equivalent to Class 100,000. The CM/GC may transfer some of the continuous clean up responsibilities to its lower tier subcontractors, but the University shall still hold CM/GC responsible for continuous clean up in the event it feels the Project is not being maintained in a clean manner or meeting the requirements of the Specifications.

### 3.13. SMALL TOOLS

3.13.1. Provide all small tools to be required for the portion of Construction Work to be performed by the CM/GC and reasonable for CM/GC to support the Construction Work associated with the Bid Packages. Small Tools shall be defined as tools or equipment costing less than \$300, and accessories required in connection with the Work, including, but not limited to, hammers, ladders, ropes, adzes, blocks, brooms, wire brushes, goggles, gloves, raincoats, boots, capes, tarpaulins, bits, chisels, pliers, bolt cutters, picks, hoes, scrapers, shovels, sledges, bars, wheelbarrows, dollies, wrenches, hoses (other than air hoses rented with compressors) and all similar tools.

CM/GC at all times shall furnish an adequate quantity of all such tools, appliances and equipment required for the Work. Such tools, appliances and equipment shall remain the property of the CM/GC following completion of the Work.

### 3.14. OTHER

3.14.1. The CM/GC shall include in its **Phase 2 Option Price** all other costs for labor and materials for items required by the Subcontract and reasonably expected for the scope of this Project for implementing, supervising, and managing the Work; including, but not limited to warranty, punch list, field personnel, supervision and management of the Work, meetings, inspections, observing the Work, coordinating the Work, scheduling and planning the Work, shop drawing and submittal review/coordination, safety, clean up and other items as described in the Contract Documents and Specifications.

### 3.15. COORDINATION/MANAGEMENT OF LOWER TIER SUBCONTRACTORS AND CONSTRUCTION WORK

3.15.1. The CM/GC's control of the Work shall include the immediate direction of the specific means and methods of lower tier subcontractors' activities or forces, or their scheduling of individual works; including that required to create, update or revise the Contract Schedule per the Subcontract and to assure the project is completed within the Subcontract Time.

3.15.2. The CM/GC will provide for quality control of the construction work including review of the documents and identification of discrepancies, and inspection of the work for conformance to the contract documents and coordination of lower tier subcontractor testing and inspections that are required by the specifications. The University will also provide quality inspections and will employ a testing laboratory to inspect incoming material, sample and test concrete, inspect and test shop fabrication of structural steel, inspect and test field welding and bolt torqueing for the installation of structural steel, and shop and field pipe welding and compaction testing of the soils and electrical inspections.

3.15.3. The CM/GC's responsibility shall include timely coordination of the Subcontract Schedule between lower tier subcontractors to resolve and expedite resolutions of any work that may be disputed between lower tier sub-contractors.

3.15.4. The CM/GC shall determine the adequacy of lower tier subcontractors' personnel, equipment, safety programs, and availability of materials and supplies. If these items are determined inadequate, the CM/GC shall develop a plan of recovery with the lower tier subcontractor(s) and shall enforce the applicable provisions of the Subcontract within its authority given by this Subcontract.

3.15.5. The CM/GC shall conduct and record regular Structural and Mechanical/Electrical/Plumbing coordination meetings to conduct clash detection and coordinate resolution of all issues with all related lower tier subcontractors.

3.15.6. CM/GC shall conduct regular walk-throughs of the project with University management and project personnel, including at least two formal reviews by University Facilities Maintenance staff at appropriate periods.

3.15.7. CM/GC shall coordinate the delivery, storage and inventory of University-supplied materials and equipment to the lower tier subcontractor as required.

3.15.8. The CM/GC shall continuously require lower tier subcontractors to perform job site maintenance and provide a safe work place. CM/GC shall enforce all safety-related requirements in the Subcontract. CM/GC shall assure that at all times, access to the site shall be maintained. The CM/GC shall monitor security of site for safety and impacts on neighboring facilities adjacent to the site and take immediate action, if required, when non-compliant conditions are discovered.

3.15.9. CM/GC shall develop and monitor an overall Safety Program for the Project. The program shall be in compliance with applicable Federal, State and University regulations, LBNL Standards and the Subcontract. The CM/GC shall review, monitor and coordinate the implementation of individual lower tier subcontractors' Safety Programs. The CM/GC shall confirm that lower tier subcontractors' Safety Programs include, but are not limited to, weekly formal safety tours, weekly Safety Toolbox Meetings (with documented minutes), daily "plan of the day" meetings, and daily check of safety of the Project. The CM/GC's Safety and Health Professional, shall be responsible for implementing, controlling and monitoring the CM/GC's own Safety Program and reviewing and monitoring the lower tier subcontractors' Safety Programs.

3.15.10. The CM/GC shall work with the Commissioning Agent to execute the initial startup and testing of utilities, building, electrical and mechanical systems and equipment. The CM/GC shall coordinate lower tier subcontractor's training of University's facilities maintenance and other personnel in conjunction with the LBNL Project Manager. The CM/GC shall video record the lower tier subcontractors' training sessions for future reference and provide a copy of the video to University with other project closeout documents. The CM/GC shall develop and coordinate the execution of the Electrical Energization Plan with the Commissioning Agent and the University personnel.

### 3.16. PROJECT/SUBCONTRACT ADMINISTRATION

3.16.1. The CM/GC shall, through the LBNL Project Manager, or as directed by the LBNL Project Manager, coordinate its efforts between lower tier subcontractors and the A/E to clarify interpretation of drawings and specifications; work with the A/E on the interpretation of plans and specifications; review all requests for clarification and appropriateness prior to forwarding to the A/E.

3.16.2. The CM/GC shall, through the LBNL Project Manager, coordinate and administer the shop drawing review and approval process with the A/E and advise the A/E of any unusual site conditions or Subcontract requirements affecting shop drawing approvals; and review submittals for format, compliance and general completeness prior to forwarding to the A/E for review. The CM/GC's Contract Schedule shall establish submittal schedules that allow sufficient time for review and interpretation. The CM/GC shall verify and document that the shop drawing process is adhering to the submittal schedule.

3.16.3. The CM/GC shall coordinate the change order process, submittal process, and RFI process including logging, copying, tracking, distributing, review, and filing.

3.16.4. The CM/GC shall maintain a record set (or electronic file with computer access) of construction drawings on site at all times. The CM/GC will maintain a "red-lined" set of construction drawings and specifications that document all construction changes. At the end of the project, this set will be sent to the Architect/Engineer for use in the preparation of an as-built set of building drawings.

3.16.5. The CM/GC will coordinate the completion of punch list items, training and commissioning.

3.16.6. The CM/GC shall assemble, submit and resubmit as necessary all equipment operations and maintenance manuals, warranties, and guarantees. The CM/GC shall include in their fee, management of issues that arise during the one-year performance guarantee and other warranty coordination.

### 3.17. CONSTRUCTION WASTE MANAGEMENT

3.17.1. The CM/GC shall provide the Construction Waste Management program (as noted in Specification Section 017419) including, but not limited to establishing the plan, setting up and paying for the agreements with the recycling service vendor, coordinating use of the service with the lower tier subcontractors, holding all required meetings and providing all required documentation.

### 3.18. STORM WATER POLLUTION PREVENTION PLAN

3.18.1. The CM/GC shall provide and execute a storm water pollution prevention plan (SWPPP) for protection of the site from rainy weather conditions including slope stabilization, site weatherproofing, siltation containment and dewatering if required.

### 3.19. COMMISSIONING

3.19.1. The University will provide a Commissioning Agent that will develop a commissioning plan, and coordinate the commissioning of all mechanical, electrical, fire alarm, fire protection systems. The Commissioning Agent will conduct a review of all pertinent submittals, will provide pre and post start up check lists, will provide a functional test procedure and will conduct intermittent inspections. The Commissioning Agent will coordinate the functional testing and hold regular meetings to identify and resolve deficiencies in the proper operation of the system. The CM/GC shall provide a Commissioning Coordinator that is experienced in commissioning building systems to coordinate the participation of the lower tier subcontractors in the commissioning.

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