

## Division 01 – General Requirements

### 01 10 00 Summary

1. The Summary section shall provide the following general items (as well as those listed below) that are pertinent to the project: General Project Information, a general description of the Work covered by the contract documents, type of contract, any phasing or critical dates, Work by Owner (if any), Work under separate contracts (i.e. furniture), Purchase contracts (if any), Owner-furnished, Contractor installed products (i.e. toilet accessories), Contractor-furnished, Owner-installed products (if any), Access to site (outline a detailed route, restrictions, and requirements for marking/signage, based on a discussion with the Mason PM).
2. All project materials, emails, correspondence, and submittals shall indicate the project title, project location, and project identification number (247-XXXXX-XXX) prominently on the front page, cover, subject line, or sheet as well as throughout.
3. The contractor shall inspect the job site and be aware of the conditions under which it must accomplish the work. The university will not consider or be responsible for claims as a result of failure to inspect the job site. The contractor will waive any claim based on conditions that would have been discovered from a site inspection.

### 01 14 00 Work Restrictions

1. Regular Working Hours. The University's regular (normal) working hours are from 7:00 am to 5:00 pm, Mondays through Fridays, except (a) federal holidays and (b) other days specifically designated by the Project Manager.
2. This university is the largest university in Northern Virginia. As such there are times, as a result of heightened security measures (as result of threats, visiting dignitaries, and other reasons); the contractor may not have access to the campus or portions thereof. Many of these events can and will be coordinated with the contractor prior to the event by the Mason Project Manager; however, this may or may not be the case. In the event that it is determined that the contractor cannot work, the university shall furnish a time extension on a day for day basis for such interruptions as approved and agreed upon by the Mason Project Manager, however, the contractor will not be entitled to any additional compensation for such delays as may result.
3. There are particular times during the year as a result of the academic nature of the University, that work is restricted or strictly forbidden. The University academic schedule is available on-line at [www.gmu.edu](http://www.gmu.edu); dates for years not yet included will follow the same pattern as those for the years shown. Make special note of those periods that the University is closed for holidays, which may or may not follow federal or Commonwealth holiday calendars.
4. Construction activity noise levels for a period extending from the reading days before exams until the final day of exams (ten days) shall not exceed 50 dBA. This generally precludes the use of heavy equipment, truck movements and impact type tools. See also the University sound policy and its restrictions which are to be incorporated into the contract documents.
5. There will be no Construction work the day of Commencement and Degree conferral.

### 01 21 00 Allowances and Unit Prices

1. This section must include the types of allowances (lump sum, unit price, etc.) that will be in the contract and how they will be utilized. Typically will have allowances for the Energy Management Controls portion of the contract as well as for soils.
2. Some Example allowance language for soils follows: "A unit price allowance for excavation, disposal off site, and replacement with suitable material for an estimated XXX CY of unsuitable material encountered at locations where reasonable interpretation of the Geotechnical Engineering Report (soils

report) would have indicated that the material should be suitable. This allowance would not be applicable to any replacement of unsuitable soils when reasonable interpretation of the soils report would lead one to conclude that the material present is unsuitable. This allowance is not applicable to the removal and/or replacement of any fill material (Stratum A) when reasonable interpretation of the soils report would lead one to conclude that the material present is Stratum A material. "Reasonable interpretation" is defined as linear interpolation between bore holes."

3. The Energy Management Controls Allowance shall be determined through coordination with the Mason PM and the sole source vendor prior to bid. The A/E must send set of plans and specifications to the vendor for review at each stage of design, before presentation to BCOM or the University. At the construction documents stage, the vendor will provide pricing and that value shall be incorporated price into documents.
4. For Construction Management (CM) Projects: The Guaranteed Maximum Price (GMP) proposal may include allowances as accepted by the owner and stated in the RFP Response. The CM shall provide a detailed cost breakdown of each allowance including quantities, labor, and material as directed by the Owner. The CM shall include unit pricing, as applicable, to be used to help determine the fair and equitable value of any savings and/or overages to the allowance. At the Owner's discretion, a standard unit price publication may be used for this purpose. CM overhead & profit related to an allowance is accounted for separately within the GMP.
5. The A/E shall evaluate the requirement to have the contractor formulate an allowance within the contract, in conjunction with the University, for the anticipated amount of costs associated with potential changes to the documents that relate to reviews and revisions required based upon comments from BCOM subsequent to the signing of an agreement. Such a provision for an allowance of this sort shall be clearly provided in the contract documents.
6. Any and all cost savings from an allowance item shall be credited to the Owner in the form of a deductive change order. Likewise, any cost overrun from an allowance item shall be paid by the owner in the form of an additive change order. The Contractor must provide a complete, written account and explanation, in sufficient detail for the owner, of any allowance cost overrun as a condition of approval of an additive change order.

#### **01 25 00 Substitution Procedures**

1. The Contractor shall be responsible for reviewing all substitution requests to ensure that they are complete, and if not, return them to the Sub-contractor/Trade Contractor for proper submission. The Contractor shall be responsible to review all substitution requests with the A/E and Owner. The Contractor shall be responsible for tracking and monitoring all substitution requests until all such requests are processed by the A/E and Owner. The Contractor shall ensure that all substitution requests are submitted in a timely manner. The Contractor shall include substitution requests, if any, as an agenda item in the Progress Meetings and advise the Owner immediately of any delays in the substitution request process.

#### **01 26 00 Contract Modification Procedures**

1. Change orders will be processed in accordance with the provisions of the CO-7/CO-7CM/CO7-DB and these procedures.
2. The Contractor is to provide sufficient back-up justification for the proposed (PCO) or directed change or claim. Such supporting documentation shall include supplier estimates, delivery estimates, storage estimates, labor and equipment estimates, and so forth. The Contractor is free to use what-ever format seems applicable for this back-up documentation. This said, the Contractor shall provide a GC-1 at a minimum (it is preferred that the Contractor also provide SC-1 forms for each sub-contractors and SS-1 forms for sub-sub-contractors) for each proposed or directed change or claim. Each GC-1 shall be sequentially ordered based on the date of first preparation of the GC-1 for that change.

3. Each change order that is proposed, or directed, or each claim, shall be clear to indicate the value in terms of dollars and cents as well as any claim for time. Failure of the Contractor to make the appropriate claim for time and/or monetary compensation at once formally submitting a change request to Mason is a forfeiture of future claims for compensation or time related to that change.
4. The contractor will most often receive, after negotiation, review by the designer of record, and processing a Field Change Order (FCO). This FCO will provide either authorization to proceed or give a directive to be followed as it pertains to the applicable change. The Contractor is to proceed with performance with the task/requirement as indicated in the FCO. The Contractor, however, must have a signed Change Order (CO-11) in order to be compensated for this change. Thus an FCO will give direction and the subsequent Change Order (CO).

### **01 29 00 Contract Payment Procedures**

1. Failure to follow these procedures may result in the delay or partial withholding of payments in accordance with (IAW) the procedures provided in the Commonwealth of Virginia State Bureau of Capital Outlay Management procedures and applicable state law. Questions for the following should be addressed to either the Project Manager responsible for this project or the Director of Project Management & Construction at Mason.
2. Schedule of Values: Prior to the execution of the work, the contractor shall present for approval a schedule of values for approval by the Mason Project Manager. Contractor will be paid through the use of the CO-12 format, unless otherwise indicated by the Director of Project Management & Construction. For select capital projects as directed by Mason this format will be executed using GC Pay online service.
3. A Contractor is eligible to bill for all expenses incurred during a project from the first day of a given month to the last day of the given month. Such expenses must be recorded on an agreed upon initial schedule of values prior to the beginning of work execution. Immediately following the last progress meeting of a given month, a pay application meeting will proceed if the following has occurred: The contractor has provided both Mason and the designer of record a draft copy of their pay application no later than 2 full working days prior to the last progress meeting of the month. This draft can be provided in electronic and/or paper format.
4. Any and all expenses projected to occur between the pay application meeting and the end of a given month; are understood to require validation by a Mason project inspector prior to final approval.
5. Any and all approved change orders have been included in the schedule of values as agreed upon by Mason and the contractor, and payment application of said change orders is only for work completed on or before the end of the month for which the application is being processed. Change orders that are not approved will not be paid nor shall they appear on the schedule of values.
6. The designer of record and/or the Project Manager will review the pay application and prepare comments for the pay application meeting. Likewise the Mason project inspector will review the application, verify the applicable quantities, and review progress reports prior to the pay meeting.
7. The Mason Project Inspector will conduct the pay application meeting with the contractor and the designer of record. Upon conclusion of this meeting, a marked up copy of the pay application as agreed upon by the parties will be provided to the Mason Project Manager and Director of Project Management & Construction. The contractor will then provide an updated and clean copy for final application by no later than the first working day of the month following the month being applied for.
8. In the event that the parties cannot agree to the value of a particular schedule line during the pay application meeting, the Mason Project Manager will investigate and determine the appropriate value to be paid within that month's application. Once this determination is made the contractor will indicate this value in his final application that is to be provided as indicated above.
9. Once the final monthly pay application is provided, and any projected values are verified by the Mason Project Inspector, the pay application will be processed by Mason for payment IAW the contract terms.

10. It is noted that retainage will be deducted, IAW the CPSM and the CO-7/CO-7CM/CO-7DB from each monthly payment. Release of this retainage, in part or in full, will only be considered upon substantial completion.

### **01 31 00 Project Management and Coordination**

1. The following terms are defined beyond those defined in the CPSM:
  - a. RESERVED
2. For all project documentation purposes, and in accordance with the CPSM, the contractor, A/E, and any other participant in the project shall use Department of General Services, Division of Engineering and Buildings forms as found at <http://www.dgs.state.va.us/FormsCenter/DEBForms/tabid/826/Default.aspx>. If a form is not found there, all parties are to obtain guidance from the Mason Project Manager as to the appropriate form or format to be used.
3. The Contractor shall participate in the following meetings as required by the Contract Documents to ensure successful completion of the project: The Preconstruction Conference(s); Weekly Coordination/Subcontractor Meetings, as needed; Preinstallation Conferences; Semi-monthly Progress Meetings (2x per month) or Bi-Weekly Progress Meetings (every other week) as determined by the GMU Project Manager; Monthly Pay Meetings (may coincide with Progress Meeting); Other meetings that the Owner's PM deems necessary; and Any meetings required by the Contract Documents not listed above.
4. Progress meetings are to have an agenda issued and minutes prepared by the A/E of record. If the Contract Documents do not identify the roles and responsibilities for a particular meeting, inclusive of regular progress meetings, then the A/E shall assume responsibility to schedule, coordinate, prepare/issue agenda, conduct, and prepare/issue meeting minutes as directed by the Owner's PM. Meeting minutes prepared by the A/E shall be processed and distributed to meeting participants within seven (7) days of the meeting.
5. Requests for Information: The Contractor shall be responsible for developing and implementing a RFI form for use on the Work. The Contractor shall be responsible for reviewing all RFIs prior to submission to the University. The Contractor shall be responsible for tracking and monitoring all RFIs including an RFI aging report. The Contractor shall include RFIs as an agenda topic at all Contractor regular Bi-Weekly (or Semi-Monthly) Progress Meetings and advise the University immediately of any delays in the processing of RFIs. The Contractor is responsible for facilitating information requests to keep response times to a minimum. The Contractor will maintain copies of the final answers to information requests as part of the Project records.

### **01 32 00 Construction Schedule and Progress Documentation**

1. Construction Schedule: Without taking exception to any provision of the CO-7/CO-7CM/CO-7DB (the General Conditions of the Construction Contract), the Contractor shall additionally follow the following procedures with regards to generating and maintaining the schedule for the work.
  - a. The Contractor is wholly responsible for the accuracy, correctness, and feasibility of the schedule presented to the University. The Contractor is permitted to use commercially available software for the development of their project schedule. The University, however, does not warrant, approve or otherwise recommend the use of any particular product nor does the University retain any responsibility for the accuracy, correctness or lack of flaws in any schedule it is presented using such software as may be used by the Contractor.
  - b. In presenting its schedule at any time, as provided in the general conditions, the Contractor shall provide a hard copy, a soft copy in the form of an adobe (.pdf) document, and the data file produced by the software utilized. Unless the University indicates otherwise, the Contractor shall be responsible for providing the University one copy (or license) of the

software used to produce the schedule, and read the prior mentioned schedule data file, at its expense.

- c. It is the expectation of the University that any schedule presented by the Contractor presents a reasonable plan for performing the work. Additionally in presenting the schedule, or updates thereof, to the University, the Contractor warrants that this plan is presented such that the activity durations are reasonable, the logic ties are accurate between the various activities, and the aggregate remaining duration estimate is reasonable. As such the University makes no agreement nor does it take responsibility for any of the preceding.
  - d. The following scheduling procedures offered in various software products and otherwise are strictly forbidden for use in the development and maintenance of the schedule: the use of multiple calendars, the use of retained logic, the use of "user assigned constraints", and the use of interruptible activity durations.
  - e. While generally discouraged and found unacceptable, the following scheduling procedures offered in various software products and otherwise may be used only as exceptions that are specifically approved for each activity or logic tie that it is felt by the Contractor that it is warranted: activity leads, activity lags, untied activities, start to start logic ties, start to finish logic ties, and finish to finish logic ties.
  - f. In general activity durations should be formulated such that activities last no longer than the update period specified. The Contractor may opt to break apart portions of the work in phases, locations or other easily identifiable and discrete items in order to attain this requirement.
  - g. The Contractor shall use a 7 day per week (or calendar day), 8 hour per day (or regular work day) calendar in the development of the schedule.
  - h. Regardless of the software or method used, those activities that are on the critical path must be clearly identifiable both graphically and in a tabular format.
2. The eventuality that weather will negatively affect the progress of the work is highly likely over the period of the contract. For that reason the Contractor will anticipate, plan for, and put sufficient time in his construction schedule to account for the likelihood of weather, as defined in the general conditions. This provision supersedes and waives any additional compensation in the form of time or monetary compensation as provided in the general conditions. The Contractor shall provide the following number of work days(based upon the months that the work is to be executed) as float in their schedule as pre-determined quantity of allowable weather days to those activities that are 1) affected by adverse weather as defined in section 6 of the general conditions, and 2) on the critical path:

GMU Weather Day Allowance	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
	6	5	6	6	6	6	6	5	5	4	5	5	65

- 3. The Contractor shall provide an internet-based or web-based Project Management Information System (PMIS), hosted by the Contractor, for use in scheduling and tracking of the Projects activities and documentation. The PMIS shall have multiple levels of secure access to allow Contractor, Owner, A/E, CA, consultants and Construction Trade Contractor personnel appropriate access to the Projects information. The Contractor shall provide user training to the AE's PM and Owner's PM on the system. If an internet-based system is provided, the Contractor shall provide software licenses, appropriate hardware if needed based on software requirements, and install the software on the AE's PM and Owner PM's computers. The Contractor will post and maintain Project schedules, reports, records, minutes, tracking documents, and other items of interest to team members and other project constituents.

4. The University, Contractor and/or A/E Firm may dictate certain milestones that need to be tracked during the course of the project. The following are a non-all-inclusive list of example milestones (those listed will be provided at a minimum): Break Ground/Start Construction; Complete footings/foundations; Complete building structure (concrete or steel frame topped out); Building Skin completed (precast/brick/metal panels/windows/curtain wall substantially complete); Roof complete; Permanent power energized; HVAC, Electrical, and fire protection systems complete and ready for pre-testing and commissioning; Commissioning Ready Date; Final Inspections; Certificate of Occupancy/Substantial Completion; and Complete Punch list/Final Completion. These items must be provided on any published schedule and updated as agreed upon by the project team. None of these items shall be a linked event to any other activity in the schedule so as to differentiate them and mark them distinctly from the logic in the schedule.
5. Progress Reports: During the administration of the contract, the Contractor shall prepare monthly reports for the Owner to document Project actions and to keep the Owner's managers apprised of progress. The reports shall cover all relevant topics, including schedule, budget, submittals, RFI's, RFP's, change orders, quality control, meetings, safety and other topics conducive to the success of the Project. The Contractor shall maintain frequent contact by telephone, site visits, meetings, etc., with all parties involved with the Project. The Contractor shall submit prepared monthly progress reports to the Owner's PM by the 10th of the following month. The Owner's PM will provide or approve formats for periodic status reports, including daily diaries, weekly reports, monthly status reports, etc. The Contractor will maintain a detailed daily log of all events that occur at the job site or elsewhere, which affect, or may be expected to affect Project(s) quality, scope, or progress. The Contractor's daily log shall contain at a minimum a record of the weather, each Sub-contractor/Trade Contractor's work on the site, number of workers, identification of equipment and deliveries, work accomplished, problems encountered, and other similar relevant data as the Owner's PM may require. The Contractor will submit bi-weekly reports to the Owner's PM and A/E on the status of construction, including updated copies of all logs maintained at the site for change orders, claims, submittals, etc. Bi-weekly (or semi-monthly) reports shall be submitted prior to Bi-Weekly (or Semi-Monthly) Progress Meetings.

### **01 33 00 Submittals and Submittal Procedures**

1. The A/E shall prepare, as a part of the project manual, a consolidated listing of all submittals included therein. This listing is to provide the kind of submittal to be provided (e.g. certificate of compliance, shop drawing, sample, schematic, cut sheets, product data, etc.), the number of copies to be provided for that submittal, the deadline for submittal (relative to the beginning of the project, the point of execution where that product is to be used, the commissioning start date, and/or substantial completion), and what specification section that submittal is applicable to and/or referenced from. The Mason Project Manager can provide a format for this consolidated listing upon request.
2. The base review period for all submittals shall be 21 calendar days for capital projects and 14 days for non-capital projects, noting key exceptions elsewhere in this section. Submittals shall be distributed to both the A/E and the University simultaneously.
3. Submittals for materials that require approval prior to being installed in a project, or for those submittals used to certify a level of completion prior to the advancement to another milestone in the project, are to be processed as follows: 1) the Contractor shall prepare the submittals and ensure they are full and complete, signifying such through a stamp or other method that is acceptable to the Mason PM, 2) the Contractor shall distribute the submittal to the Mason PM and the A/E, as well as others as indicated in the project manual; 3) the A/E and the University shall review the submittal simultaneously for compliance with the contract documents and other related standards and requirements; 4) prior to issuance back to the contractor the A/E shall confirm with the Mason PM what, if any, comments the University has on the submittal as well as the A/E's recommendation as to the level of approval the submittal should garner; 5) the A/E shall return the submittal to the Contractor with its comments and level of approval.

4. For those submittals that are rejected or are required to be resubmitted the contractor shall be responsible for any and all time delay that results from that point until such time as an approved submittal is returned to them.
5. For those submittals relating to special inspections, submittals shall be provided IAW the applicable standard cited and referenced in the approved drawings from BCOM.
6. In addition to the time allowed for standard submittal review, as indicated elsewhere in the contract documents, the Contractor will allow for up to 45 days for the review and approval of the fire alarm and sprinkler submittals. The Contractor acknowledges and understands that this project is being executed under the jurisdiction of the Bureau of Capital Outlay Management (BCOM), and not any other local, regional, county or other sub-element of the Commonwealth of Virginia for code compliance. As a result the Contractor recognizes that BCOM has the right to fully review the shop drawings for fire safety and provide approval. This requires that the Contractor provide these shop drawings as early as possible, and that the Contractor assumes all risk involved with any delay resulting from failure to provide this submittal that complies with the contract documents within the first 60 days of the construction phase contract.
7. Generally, submittals that can be put into some form of printed format are to be provided as follows: During construction execution: 2x paper printed copies and 1x electronic (.pdf) format; Record document submittals: See section 01 78 00 and Chapter 2 of this manual.
8. Submittals can be processed and managed through electronic means as directed by Mason's Project Manager. The Contractor and the A/E will process electronic submittals in the same general process as indicated herein.

### **01 35 00 Special Procedures**

1. The Contractor shall ensure they coordinate closely with Mason staff in regards to any kind of abatement work that may be a part of the project. The contractor must take care during construction, to not create conditions for such things as mold growth, legionnaire's disease, or sick building syndrome. Guidance will be provided to the Contractor by the A/E in accordance with the CPSM in regards to lead based paint, asbestos, and/or mold remediation.
2. Mason has a no tolerance policy with regards to fraternizing with students. Catcalls, whistles, shouts, etc. are not acceptable. Personnel observed or reported to be participating in these activities will be removed from the project.
3. During construction the Contractor is responsible for adequate signage and way-finding for any and all campus routes that are disrupted by construction activities, unless specifically approved to be close by Mason. The contractor shall propose pedestrian and other routes prior to installation of fencing or other barricades for approval to the University. All routes provided must perform in a similar manner to those that are disrupted (e.g. a vehicular path disruption shall provide the same traffic conditions as the non-disrupted state inclusive of MOT, or accessible pathways must have an alternate and equally accessible pathway provided). The contractor shall consult the accessible path routes information available on the Mason website in developing such plans. Mason's office of equity will validate that alternate pathway plans are in conformance with these requirements during construction.
4. Disruptions to parking and transportation systems must be fully coordinated with Mason Parking and Transportation. Contractors are responsible for paying for parking permits for any and all vehicles that park outside of the designated construction area.

### **01 40 00 Quality Requirements**

1. The Contractor shall have the overall responsibility for scheduling, coordinating, and inspecting all the Construction Trade Contractors' workmanship, materials, and equipment to ensure conformity with requirements of the Construction Documents (including the contract drawings and specifications, subsequent contract change orders, and approved submittals). The Contractor will be required to develop a formal proactive Quality Control Plan using project staff and subcontractors' inspections

prior to start of construction. The Contractor shall coordinate with the owner for the procurement of any specialized inspections to be paid for directly by the Owner as required by the Contract Documents.

2. The Contractor shall make quality determinations based on the records and inspections to protect the University against defects, deficiencies, omissions, and delays. The Contractor will promptly notify individual Sub-contractor/Trade Contractor(s), in writing, observed variances from the Contract requirements and send a copy to the Mason's PM/Mason's PM and A/E. The Contractor will advise the Mason's PM and A/E if the Sub-contractor/Trade Contractor(s) fail(s) to promptly remove, correct, or replace construction work the Contractor and/or A/E have rejected, and the Contractor will recommend subsequent courses of action. As appropriate, the Contractor shall make recommendations to the Mason, to require additional inspection or testing of the work according to the provisions of the Contract Documents, whether or not the work is fabricated, installed, or completed. Throughout construction, the Contractor will maintain an up-to-date list of defects, deficiencies, delays, and omissions as well as corrective actions taken. The Contractor will prepare and maintain inspection reports according to the CPSM's inspection and acceptance requirements.
3. Special Tests and Inspections: The Owner will engage a qualified testing agency to conduct special tests and inspections required by in accordance with the requirements of the VUSBC, IBC and the Commonwealth of Virginia Construction and Professional Services Manual (CPSM), VUSBC Special Inspections requirements. Other inspections are the responsibility of the contractor.
4. Mockups: Before installing portions of the Work requiring mockups, the Contractor/CM/Design-Builder will build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
  - a. Build mockups in locations and of sizes indicated or, if not indicated, as directed by the Architect.
  - b. Build mockup of a portion of the exterior of the building that includes a corner, at least one bay in one direction and at least one bay on the other side of the corner, and one floor high (unless it is appropriate to do more than one floor as determined by Mason) by full thickness, including face and backup wythes and accessories. The mock-up shall include each type of exposed unit masonry construction, precast concrete panel, stone trim, metal wall panel, window, glazed aluminum curtain wall, and glazing (as are appropriate for the project), with sealants, closures and other items that will be installed in the final construction.
    - i. Include a sealant-filled joint at least 16 inches (406 mm) long in each mockup.
    - ii. Include through-wall flashing installed for a 24-inch (610-mm) length in corner of exterior wall mockup approximately 16 inches (406 mm) down from top of mockup, with a 12-inch (305-mm) length of flashing left exposed to view (omit masonry above half of flashing).
    - iii. Include metal or wood studs as indicated in the construction drawings, sheathing, veneer anchors, flashing, and weep holes in exterior masonry-veneer wall mockup.
    - iv. Where masonry is to match existing, erect mockups adjacent and parallel to existing surface.
    - v. Clean one-half of exposed faces of mockups with masonry cleaner as indicated.
  - c. Build mockup of an exam/training support/medical support/treatment room (if present in the project). The mock-up shall include floor, wall, and ceiling finishes, doors, frames, window treatment, cabinetwork, and other items that will be installed in the final construction.
  - d. Build mockup of a residential unit (if present in the project). The mock-up shall include floor, wall, and ceiling finishes, doors, frames, window treatment, cabinetwork, and other items that will be installed in the final construction.

- e. Provide mock-ups of other products and systems as required in specification sections in Divisions 03 through 14. Provide each mockup using the exact materials to be used in the Work, including adjacent materials and substrates.
  - f. Notify the Architect at least seven (7) days in advance of dates and times when mockups will be constructed.
  - g. Demonstrate the proposed range of aesthetic effects and workmanship.
  - h. Approval of mockups is for material and construction qualities specifically approved by the Architect in writing.
  - i. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups, unless such deviations are specifically approved by Architect in writing.
  - j. Obtain the Architect's approval of mockups, in writing, before starting work, fabrication or construction.
    - i. Allow seven (7) days for initial review and each re-review of each mockup.
  - k. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
  - l. Protect accepted mockups from the elements with weather-resistant membrane.
  - m. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion at the discretion of Mason.
  - n. Demolish and remove mockups when directed, unless otherwise indicated.
5. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Sections in Divisions 02 through 49.

### **01 51 00 Temporary Utilities**

1. Install temporary service or connect to existing service. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services. Provide temporary meters and pay all utility charges during construction. The contractor is responsible for closing any and all utility accounts it may open and transfer then to George Mason, if they are to be maintained for permanent service. The contractor shall pay all utility charges until such time as George Mason acknowledges in writing that it has fully transferred all utility charges into its account with the various individual utility providers.
2. Utility Meters (using existing Mason service). Provide a digital electric meter or a stand-alone sub-meter for the building and/or project site during construction. Meter Chilled Water (CW) and High Temperature Hot Water (HTHW) energy usage through the use of ultrasound flow meters on the supply side of both CW and HTHW and temperature transmitters on the supply and return sides of both the CW and HTHW. These flow meters and temperature transmitters shall be connected to communicate with the Siemens Building Automation System. Provide a water meter for domestic water for the building in accordance with the servicing utility requirements. Provide a separate deduction water meter for irrigation water.
3. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
4. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

5. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
6. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.
7. Electric Power Service Distribution: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations. Install electric power service overhead, unless otherwise indicated.
8. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
  - a. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
9. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel. Install four telephone line(s) for each field office.
  - a. Provide additional telephone lines for the following:
    - i. Provide a dedicated telephone line for each facsimile machine in each field office.
    - ii. Provide four line(s) for Owner's use.
    - iii. At each telephone, post a list of important telephone numbers.
      1. Police and fire departments.
      2. Ambulance service.
      3. Contractor's home office.
      4. Architect's office.
      5. Engineers' offices.
      6. Owner's office.
      7. Work Control 703-993-2525.
      8. Principal subcontractors' field and home offices.
  - b. Provide superintendent with cellular telephone or portable two-way radio for use when away from field office.
10. Electronic Communication Service: Provide a desktop computer in the primary field office adequate for use by Architect and Owner to access project electronic documents and maintain electronic communications. Equip computer with not less than the following: Provide DSL in primary field office.

### **01 52 00 Construction Facilities**

1. For all capital projects the following facilities must be provided, at a minimum:
  - a. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Architect, and construction personnel office activities and to accommodate project meetings specified in other Division 01 Sections. Keep office clean and orderly. Furnish and equip offices as follows:
    - i. Furniture required for Project-site documents including file cabinets, plan tables, plan racks, and bookcases.

- ii. Conference room of sufficient size to accommodate meetings of 10 individuals. Provide electrical power service and 120-V ac duplex receptacles, with not less than 1 receptacle on each wall. Furnish room with conference table, chairs, and 4-foot-(1.2-m-) square tack and marker boards.
  - iii. Drinking water and private toilet.
  - iv. Coffee machine and supplies.
  - v. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F (20 to 22 deg C).
  - vi. Lighting fixtures capable of maintaining average illumination of 20 fc (215 lx) at desk height.
- b. Owner's Representative's Field Offices: Prefabricated mobile unit for two staff persons with lockable entrances, operable windows with blinds and serviceable finishes; heated and air conditioned; on foundations adequate for normal loading. The office shall have a minimum of 250 square feet office space, air conditioned/heated and illuminated for office use. The locksets shall include deadbolt combination with minimum three keys. Furnish the office as follows:
- i. Provide 2 office desks, 2 desk chairs, 2 side chairs, 1-eight foot bookshelf, 1 drafting table with adjustable lamp and stool, 1 plan rack, 1 plan table or counter top space, 3-four drawer lockable filing cabinets, 1 storage cabinet and 1 coat tree or wall hooks.
  - ii. Provide minimum two 120V outlet at each desk, an additional outlet spaced at not more than 10 foot intervals on one wall in each room.
  - iii. Provide six telephone/data lines.
  - iv. Provide water cooler/heater unit and private toilet.
  - v. Provide portable, UL rated, fully functional Fire Extinguisher.
2. For non-capital projects a common use field office shall be provided as directed by the Mason Project Manager. The A/E shall specify the size and accommodations to be provided in the contract documents.
3. Janitorial Services: Provide janitorial services on daily basis for temporary offices, first-aid stations, toilets, wash facilities, lunchrooms and similar areas.
4. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations. Such temporary offices, shops, and sheds are to be located within limits of the construction area or outside of 30 feet (9 m) of building lines. Such sheds must be constructed of noncombustible according to ASTM E 136. Comply with NFPA 241. Store combustible materials apart from the object of the work, building or project.
5. Traffic Controls: Comply with requirements of authorities having jurisdiction. Contractor will provide Movement of Traffic (MOT) and applicable Traffic control measures as required. Coordination of these measures shall be with the Mason Police Department as well as Mason Parking and Transportation. Protect existing site improvements to remain including curbs, pavement, and utilities. Maintain access for fire-fighting equipment and access to fire hydrants. Coordinate fire access with University Environmental Health and Safety Office
7. Dewatering Facilities and Drains: George Mason University maintains delegated authority for VSMP requirements and maintains its own MS4 permit, thus is the AHJ for this system. Maintain Project site, excavations, and construction generally free of ground water. Dispose of rainwater in accordance with the approved land disturbance and Erosion and Sediment Control Permit. Remove snow and ice as required to minimize accumulations.
8. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. See elsewhere in the design manual regarding recycling, waste management, and waste diversion.

9. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
10. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.
11. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

#### **01 55 00 Temporary Parking and Access**

1. The Contractor is required to purchase a parking permit for all his personnel and vehicles that will be parked or operate in the campus. See the Mason Parking and Transportation website for more information on parking regulations and requirements.
2. The Contractor shall provide at least one parking space within the construction site for University use, near to the temporary office facilities.
3. The Contractor is permitted to use for parking any portion of the construction site that is available after all other uses (including, but not limited to, deliveries, loading, staging, and so forth) and required protection, for parking. Such space, if available, is not to be expected as a part of site logistics planning and limited to a small (less than 5 vehicles) on site.

#### **01 57 00 Temporary and Environmental Controls**

1. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
2. Temporary Erosion and Sedimentation Control: Comply with requirements of University's Municipal Separate Stormwater Sewer System (MS4) EPA Construction General Permit and annual permit manual, whichever is more stringent and requirements specified in Division 31 Section "Site Clearing."
3. Temporary Erosion and Sedimentation Control: Provide an erosion and sediment controls plan set that complies with the University annual permit. Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, whichever is more stringent.
4. Stormwater Control: Comply with requirements of the University annual permit requirements. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
5. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
6. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Obtain extended warranty for Owner. Perform control operations lawfully, using environmentally safe materials.
7. Site Enclosure Fence: Before construction operations begin, furnish and install a minimum of a six foot high, chain link, site enclosure fence, completely surrounding construction area, in a manner that will prevent people and animals from easily entering site except by entrance gates. Six foot high.
  - a. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations and protect students, faculty or visitors to the campus.

- b. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish six set of keys to Owner.
    - c. Entrance gate(s): As required to maintain access to the site. Gates shall be roller type, shall be installed level and maintained in good working order at all times.
8. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting. Coordinate emplacement and maintenance with University Environmental Health and Safety as well as the University Equity Office.
9. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weather tight enclosure for building exterior.
10. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.
11. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
  - a. Prohibit smoking in construction areas.
  - b. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
  - c. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
  - d. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.
  - e. Obtain necessary work permits from University Safety Office.
12. The Contractor is wholly responsible for the execution, maintenance and removal of any and all environmental, storm water pollution prevention, and erosion & sediment control measures as described in the contract documents and/or as required by federal and state law and regulations. In the event that the University is found to have not been in full compliance with any law or regulation with regards to these areas on the project as indicated by an inspector from the appropriate state agency or the George Mason project inspector, the Contractor will rectify the deficiency within 48 hours of notice (or earlier as provided by law). If the University is cited for a violation, the Contractor will assume full liability for any and all fines associated with the citation and will fully assist the university in resolving the violation that is cited within 24 hours of being cited.
13. The Contractor will provide a distinct line item in its schedule of values for storm water pollution prevention and erosion & sediment control. Likewise the contractor will provide a line for clean-up in the schedule of values. The values assigned by the Contractor for these distinct item, as well as all other items on the schedule of values, must be approved by the Owner's project manager prior to the first application for payment. Upon initial installation of these control measures, the contractor may apply for up to 50% of the values assigned to these lines during the applicable pay application. The remaining balance will be released to the Contractor on a pro-rated monthly basis, so long as the contractor is maintaining the controls and clean-up to the satisfaction of the GMU project inspector and/or not accumulating multiple and/or repeat violations from DCR. In the event that the Contractor does not maintain controls and execute clean-up, the remaining balance may be maintained until substantial completion to ensure that the contractor maintains these controls throughout the project. Should the contractor opt to modify the planned phasing of the project for his convenience, then any additional measures, approvals, and requirements required for those additional phases shall be provided at no additional cost to Mason.

14. Indoor Air Quality Controls: RESERVED.
15. Project stake-out: The Contractor shall provide utility stake out for any utilities that are to be emplaced by local utility providers as a consequence of the work described in the contract documents. The Contractor shall coordinate with the local utility provider and provide such stake-out in the manner that is preferred or required by that utility (e.g. whether the utility wants offsets or not).

### **01 58 00 Project Identification**

1. The Contractor shall leave space on the site for the University to install a project sign or signs as it determines necessary. The A/E and Contractor shall provide graphic logos suitable for enlargement for placement on the standard University project sign. The Contractor shall make all efforts to not damage, deface, and protect the sign(s) on the site.

### **01 74 00 Construction Waste Management and Cleaning**

RESERVED.

### **01 77 00 Closeout Procedures**

1. Closeout of a project is a deliberate process that Mason considers a critical element. Closeout starts at the point that the contractor indicates that they are prepared for commissioning activities to start and concludes once final completion is certified.
2. Attic Stock: Mason generally does not desire attic/bench stock from projects (see also chapter 2 of this design manual on A/E determinations for Attic stock). The A/E shall discuss with Mason its needs for attic stock. If this is to be provided the A/E shall provide, in the space program room for this attic stock to be stored within the building or designated in another facility, as determined by Mason. The space shall be located adjoining to a mechanical area (see 3.2.14) or a Building Service Area (3.2.13). In the event that Attic stock is specified or required, the following procedures apply.
  - a. Attic stock shall be passed to Mason as a distinct submittal as a part of closeout activities. The Contractor shall collect and protect all Attic stock in a designated location agreed upon mutually by Mason and the Contractor. The required attic stock shall be only in proportions as indicated in the design documents. Likewise, all of the attic stock shall be provided to Mason at one time.
  - b. The Contractor shall prepare a transmittal document, similar to that of a submittal for the attic stock items, including a full inventory.
  - c. Once received, Mason will be responsible for transporting and locating the attic stock in its final destination, if the designated storage area during construction mentioned here-in is not the one and same location as the attic stock final destination.
3. Other Closeout Documentation and Requirements: RESERVED

### **01 78 00 Closeout Information and Record Documents**

1. The Contractor shall compile and provide a warranty manual to Mason in a format as directed by Mason.
2. See also Chapter 2 of this Manual.

### **01 79 00 Demonstrations and Training**

RESERVED

**01 80 00 Sustainability Documentation/Certification Requirements**

RESERVED

**01 90 00 Commissioning Requirements**

RESERVED