
PERFORMING CONSULTANT SERVICES DURING CONSTRUCTION

The Agreement between Massport and the Consultant will stipulate several construction phase services that the Consultant must perform on the project. This section provides some examples of such services. At the end of the project, the Consultant must certify (Exhibits 19 and 20) to Massport's Department of Public Safety that the professional construction phase services have been performed during construction.

A. Partnering

If Massport's Project Manager approves of it, the Consultant must arrange with the General Contractor (GC) immediately after the contract is awarded, a Partnering Seminar, which is intended to enhance the participants' project understanding and interaction. The owner (Massport) and the GC will generally share the costs of this seminar. Costs typically include the hiring of a professional partnering facilitator, the rental of an off-site conference location and refreshments/lunch.

B. Pre-Construction Conference

The Pre-Construction Conference will be held to establish the lines of communication among all project participants and to set the tone for the project's Construction Phase. The Consultant must work with Massport's Project Manager and the GC to schedule and conduct a Pre-Construction Conference with the:

- ◆ Sub-Consultants
- ◆ General Contractor (GC)
- ◆ Sub-Contractor(s)
- ◆ Resident Engineer (RE)/Inspector
- ◆ Facility Personnel
- ◆ Fire Department, Public Safety, Compliance Department and Risk Management Department Representatives

The Consultant must help Massport's Project Manager detail the design specifics, budget, schedule, and other items of note for the meeting. Exhibit 21 provides the Consultant with Massport's suggested Pre-Construction Conference Agenda. The Consultant must prepare meeting minutes that list all meeting attendees and discussion items, and send them to Massport's Project Manager and all attendees for information and action.

C. Schedule Review and Approval

1. Initial Review

The Consultant must thoroughly review the GC's initial construction schedule within one week of its submission, to ensure that it is logical and stipulates a project completion time within the Contract time limits. This schedule and later schedules may serve to resolve disputes during the project, such as delay claims. The Consultant must reject or approve the initial schedule and inform in writing, both the GC and Massport, of its action.

2. Periodic Reviews

The Consultant must review, at least monthly, the GC's construction schedule to:

- ◆ determine if the work is progressing on schedule.
- ◆ verify the integrity of critical sequencing relationships.
- ◆ ascertain the cumulative effect on the schedule of all adjustments and changes to work already incorporated in the Construction Contract.

The Consultant must approve or reject the GC's submitted schedule in writing to the GC. The GC must respond to the Consultant's schedule comments by revising the schedule accordingly and resubmitting it to the Consultant with its submission of Pay Requisitions. The Consultant must expedite the review of the updated construction schedules with the Pay Requisitions.

3. Two-Week Schedule

At the weekly job meeting, the GC must present its two-week "look ahead" schedule. This schedule should include details of what it intends to do during the next fourteen days, and when it will do it. The GC should view the two-week schedule as its work commitment to the Consultant and Massport. The Consultant and Massport will review the schedule and offer the GC constructive comments, if warranted, to be added to the schedule. The Consultant and Massport will coordinate and adjust their activities accordingly so that each can perform its respective review efficiently to achieve the classic "win, win, win" outcome. If the GC is performing the job on Massport property, it must be especially sensitive to the several hundred thousand people who travel through Massport each day. If the job is not on Massport property, the GC must work with an appreciation of Massport's serious concern for its public image, which demands that the GC honor its commitment to perform certain tasks at certain times.

D. Payment Schedule Review

The Consultant must review the GC's Payment Schedule and Schedule of Values to ensure that they are reasonable and consistent with the approved Construction Schedule as described in Paragraph C.3, above. If the Consultant is satisfied with the Payment Schedule and the Schedule of Values, it must recommend that Massport's Project Manager approve of it. The Consultant's and Massport's approvals are necessary before the Consultant will endorse and process the GC's initial Payment Requisition according to the Payment Schedule.

E. Shop Drawing Review

Massport considers shop drawings a major control factor in the approval of construction work. Shop drawing review provides the Consultant with the opportunity to carefully review the essential elements of the works. Massport will ensure that the shop drawings comply with the contract documents and are coordinated with associated items of work.

The Consultant and the GC must collaboratively ensure that each submission is received early enough to allow review and approval before the work begins, and to accommodate construction progress.

The responsible designer familiar with the work and other related disciplines' personnel responsible for associated items of work must review shop drawings. Shop drawings that a sub-consultant reviews must bear both its and the Consultant's approval stamps. Shop drawings must usually be returned to the GC within one week, although sometimes the Agreement allows two weeks for their return. The Consultant must maintain a central file of all shop drawings, including a detailed record of each submission's date, the date of the approval or disapproval, and the date that they were transmitted to the GC. The RE must maintain a second shop drawing file at the job site.

The Consultant should follow the guidelines below in reviewing shop drawings:

- 1) Receive shop drawings and maintain a Shop Drawing Log in a format similar to that shown in Exhibit 22.
- 2) Review shop drawings, take appropriate action, (use stamp, as in Exhibit 23) and return them to the GC expeditiously. The turnaround time for shop drawing review cannot exceed two weeks. Require resubmission, if necessary.
- 3) Verify that the lead designer of each major discipline actually checked their shop drawings in detail.
- 4) Verify that the GC has checked and noted its approval of the shop drawings.
- 5) Obtain required, properly certified laboratory and test reports, and review them.
- 6) Issue detailed or supplemental drawings as required.
- 7) Confer with the Facility Representative and Massport's Project Manager before approving the suggested choice of items, i.e., choice of colors, types of carpets, brands of tiles, etc.

Exhibit 23 provides the Consultant with a copy of a shop drawing stamp that could be used by the Consultant to designate the appropriate action required as a result of the shop drawing review.

NOTE:

- 1) The text below the action boxes of the stamp emphasizes the GC's responsibility for all shop drawings.
- 2) The Consultant should check off the block entitled "NOTED - No Action Required" if it does not need to review or approve of the shop drawings.

F. Weekly Job Meetings

The Consultant must arrange and conduct weekly or biweekly job meetings to achieve two goals:

- ◆ To monitor the progress and quality of the work, per the Contract.
- ◆ To assist in coordinating construction and Massport operational activities.

The Consultant must also visit the job site before the weekly job meeting and as much as needed, but no less frequently than once each week to:

- ◆ observe the progress of the construction.
- ◆ uncover and resolve construction difficulties, without removing the responsibility from the GC.
- ◆ to become satisfied with the quality of the work.

The Consultant must bring a copy of the project plans and specifications to each job meeting. It must also make sure that the meeting minutes record information that attendees discuss on project progress and cost, such as potential change orders, schedule delays, and unusual job conditions.

Within five days of the meeting, the Consultant or a designee must prepare, sign and, with Massport Project Manager's approval, distribute typed meeting minutes (possible format - Exhibit 24) to all attendees and other designated recipients. The distribution should contain a statement to the effect that, "If no objections or corrections to the report are received within seven days, the report will be considered a true and fair accounting of the meeting."

G. Federal Aviation Administration

As mentioned earlier, Massport may be eligible to receive FAA grant money if the project can meet all of its reimbursement requirements. The Consultant must know and understand these FAA requirements. On projects that are eligible for FAA reimbursement, the Consultant must submit to Massport, with the contractor's Payment Requisition, one of the forms entitled, "Breakout Of Eligible and Ineligible Costs for the FAA Grant" in Exhibits 25 for unit price, and 26, for lump sum contracts. By doing this, parties needing a tally of eligible and ineligible costs will have it readily available.

Exhibit 27 provides a sample time sheet that Massport in-house REs, Surveyors and Quality Assurance Specialist on Airport Improvements Projects (AIP) potentially eligible for FAA reimbursement may use to record their work hours.

H. Payment Requisitions

According to Chapter 30 Section 39K of the Massachusetts General Laws, the Consultant must review and certify that the GC's monthly (Exhibit 28) and final (Exhibit 29) payment requisitions are valid. The Consultant must also make sure that the Contractor's monthly update of the project schedule, quantities, equipment usage, as-built drawings of the horizontal and vertical locations of project elements, payroll compliance with federal and state wage rates, and other requirements are also valid. Based on its observations and knowledge, the Consultant should consider these certifications as concrete indicators to Massport of its endorsement that:

- ◆ The Contractor has progressed the work to the indicated point.
- ◆ The Contractor has performed the work according to the Contract Documents.
- ◆ The Contractor is entitled to payment of the certified amount.

Chapter IV, Section 2, Paragraph B.11 further discusses Massport's final payment requisition certification requirements. Massport must expeditiously process payment requisitions because there is a fifteen-day statutory limit between the receipt of a valid requisition and the actual remittance of the payment to the GC, after which the GC may seek interest payments from Massport.

I. Changes

1. Background

All participants in a construction project must try to minimize changes. If a change is needed, any member of the project team, (i.e., the GC, the Consultant (A/E) or Massport) can initiate a Change Order Proposal (COP).

2. Change Order Proposals

A COP typically involves work that has been added or deleted, and has time and money implications. After the three parties involved fully understand the work of the Change Order, the GC must prepare and submit a COP to the Consultant. This COP must include a quoted price for the change showing the quantities and unit prices or lump sum, broken down in enough detail so that all parties can understand the total COP price components. Massport recognizes two methods of pricing the COP cost:

- ◆ *Lump Sum.* Massport and the GC usually prefer this method of Change Order because it defines the price up front, providing an opportunity for the GC to maximize its profit by efficiently performing the work.
- ◆ *Time and Materials.* Massport and the GC use the T&M Change Order if they cannot reach an agreement. This method may be used for any number of reasons, but most often, it is used because the parties cannot clearly define the extent of the work.

The Consultant, the RE and Massport's Project Manager should review the COP right after receiving it to more easily and intelligently analyze the GC's quotation, to keep the project on schedule, and to maintain relationships. The Consultant must keep a record of COPs on the Change Order Proposal Summary Report shown in Exhibit 30, which shows the current financial status of the project.

Before evaluating the GC's COP, the Consultant with the RE must independently estimate the costs, credits and time resulting from the COP. The Consultant must use its independent estimate to evaluate the GC's COP and to reconcile any cost, credit or time differences. The Consultant should discuss its evaluation with and receive guidance from Massport's Project Manager to negotiate a fair and reasonable CO with the GC. After the Consultant and the GC reach an agreement, the Consultant should submit the CO to Massport's Project Manager for approval. If an agreement between the parties cannot be reached, Massport may have the GC perform the extra work on a time and materials (T&M) or a "force account" basis, or may elect to have another contractor perform the additional work. Exhibit 32 provides a convenient worksheet for calculating the value of extra T&M work.

Before approving a COP to authorize extra work or delete work, the Consultant and Massport's Project Manager must systematically weigh the COP's impact on life cycle costs and time against its tangible and intangible benefits. The Consultant must never authorize the GC to proceed with any change without first obtaining Massport's Project Manager's approval.

If approved, the Consultant must prepare a formal Agreement for Change Order, as shown on Exhibit 31. The Change Order may include one or several COPs. The GC, the Consultant and the Project Manager sign the Agreement for Change Order. The Agreement for Change Order must include a letter from the Consultant that summarizes the CO and recommends an appropriate action.

J. Requests for Information, Interpretation of the Contract Documents, and Other Requirements

During the project, the GC and subcontractors may have questions about various technical issues. The GC may use the Request for Information (RFI) form to submit formally such questions to the Consultant. The Consultant is obligated to respond quickly, in writing, to such formally submitted questions, depending on the urgency of the request. The Consultant must send such responses to the GC, Massport's Project Manager and the RE. The Consultant must track all RFIs in a spreadsheet or database format and discuss the RFI status with participants at the weekly job meetings.

At the GC's or Massport's request, the Consultant may be required to:

- ◆ interpret and render, sometimes in writing, decisions on the requirements of the contract documents.
- ◆ instruct the GC and subcontractors on behalf of Massport and prepare supplementary drawings or instructions needed to accomplish the work of the contract documents.
- ◆ help the GC prepare Change Orders for Massport's approval and execution.
- ◆ help Massport resolve any disputes and claims that occur with the contractors.

PROVIDING RESIDENT ENGINEER/INSPECTION SERVICES

A. Work Site Presence

Massport recognizes the importance of having an Owner representative at the work site. Massport generally employs any of the following three means to ensure that RE inspection services are provided:

- ◆ It has the Consultant provide the Resident Engineering Services.
- ◆ It provides an in-house, Massport Resident Engineer (RE).
- ◆ It provides an RE through a separate Consultant.

If Massport contracts with the Consultant to provide Resident Engineering Services, the Consultant must perform the scope of the services that the Agreement between Massport and the Consultant stipulates. The following paragraphs describe many tasks that Massport expects a RE/Inspector to perform.

B. RE/Inspector Tasks

This section describes many, but not all, of the RE/Inspector's tasks that may be required during the construction phase.

1. Daily Log

The RE must keep a daily log to record the inspector's understanding of what the GC and subcontractors have accomplished every day of the project. The daily log should note the following information:

- ◆ the work that has been done
- ◆ the equipment that is used and not used
- ◆ unusual things that have occurred at the site during the day
- ◆ extra work and changes that have occurred
- ◆ people who have visited the site
- ◆ the weather on the work day
- ◆ other project-related information that occurred on that day

Massport's log has two components:

- a. The Daily Progress Report (Exhibit 33), This report, which the RE should submit to the Project Manager every week, indicates contractors' activities, work forces on site, hours worked, weather, equipment, time, tests, materials used, occurrences, etc.

- b. The RE's Diary. This report, which the RE should keep in a bound book, describes the work that the GC and the subcontractors accomplish during the day and other information including:
- ◆ potential changes and claims
 - ◆ extra work that was done
 - ◆ test results
 - ◆ any factors that did delay or could delay the progress of the work
 - ◆ job site accidents
 - ◆ visitors at the job site
 - ◆ the RE's work hours
 - ◆ any unusual occurrences

The Consultant or responsible party must deliver the RE's Diary to Massport's Project Manager when the project is completed.

2. Job Meeting Participation

Realizing that job meetings are an essential part of successful construction, Massport requires that all projects have weekly job meetings at the active construction sites. Typical job meetings are attended by several representatives from each essential party such as the GC, the Consultant and Massport. The RE plays a pivotal role in these meetings, sometimes as the meeting facilitator. REs will explain to meeting attendees their observations about the previous week's construction site activities, their thoughts on the proposed two-week schedule and their beliefs as to what may occur in the future. The Consultant, or sometimes the RE, prepares the job-meeting minutes.

3. Monthly Construction Progress Report

The RE must prepare the Monthly Construction Progress Report shown in Exhibit 34, which summarizes the following information:

- ◆ major work accomplished during the last month
- ◆ the status of the project compared to the schedule
- ◆ the change orders status, from both monetary and time aspects.

The RE should attach a copy of both the Contractor's updated schedule and its monthly requisition to this report.

4. Quantity Pay Books

The RE must maintain an orderly and complete Quantity Book, detailing the calculation of quantities for all payment items. The Consultant should deliver the Quantity Pay Book to Massport's Project Manager when the project is completed.

5. Shop Drawings

The RE should keep a Shop Drawing Log similar to Exhibit 22. The RE should help the Consultant process the shop drawings, samples and test results, and follow up with the Consultant to ensure that they are turned around within two weeks.

The RE should review all the scheduling documents that the GC prepares and submits, and should comment on their acceptability to the Consultant.

6. Quality Assurance

The RE should monitor the GC's Quality Control Program. The RE observes the work to determine whether or not:

- ◆ the Contractor has performed it according to the contract documents
- ◆ the work needs to be corrected or rejected
- ◆ special testing or inspection is required. If Quality Assurance (QA) tests are required, a separate QA Lab, as appropriate, must perform them.

The RE should report any quality concerns immediately to the Massport Project Manager, the Massport Quality Assurance Specialist and the Consultant.

7. Site, Material, Equipment and System Testing

The RE should verify that all tests are performed according to the contract documents and that the responsible parties are keeping proper records and reporting test results.

8. Change Orders

The RE should help the Consultant prepare all change orders, including documentation of actual construction costs for time and material work as provided under Article 23 and 80 in Division I, General Requirements and Covenants of the Contract Documents. The RE should maintain copies of the Change Order Proposal Summaries, Exhibit 30.

9. Contract Deviations

The RE should prepare the Contract Deviation Report in Exhibit 35 to advise Massport of any changes that have been made to the contract drawings or specifications during construction. Massport and the Consultant use this feedback to ensure that the design of future projects incorporate the necessary changes and refinements.

10. Compliance Reporting

Attached at Exhibit 36 are four reports to be submitted to the Massport Compliance Department by construction contractors working for Massport:

- ◆ The WEEKLY Certified Payroll Report (and Statement of Compliance) must be submitted each week by both the General Contractor and all subcontractors (including trucking firms), regardless of tier, no later than the week following the week worked. The original is to be submitted to the Authority's Compliance Department and a copy to the Authority's Consultant or Resident Engineer. The Consultant must check that the DBE subcontractors have actually performed the work (dollar amount and trade) that the Contract requires.
- ◆ The Contractor's WEEKLY Workforce Utilization Report must be submitted each week by both the GC and all subcontractors, regardless of tier, no later than the week following the week worked.
- ◆ The QUARTERLY Projected Workforce Table must be submitted by both the GC and all subcontractors one week prior to the start of work and one week prior to the start of each quarter thereafter.
- ◆ Subcontractors shall forward reports to the GC. It is the responsibility of the GC to ensure the accuracy and completeness of all reports prior to submitting them to the Authority. Only the reporting forms provided in the contract document will be accepted by the Authority. All other reporting forms will be returned to the GC for proper resubmittal.

- ◆ The Disadvantaged Business Enterprise (DBE) Quarterly Expenditure Report MUST be submitted by the GC within two (2) weeks following the end of each quarter. Note the due dates on the reporting form.

11. Payment Requisitions

The RE must review and process all the GC's payment requisitions before submitting them to the Consultant and then Massport's Project Manager (Refer to Exhibits 28 and 29). The approval process for each requisition may require the RE and the GC to hold one or more working sessions to reach an agreement on the payment amount. Payment approval is contingent upon the GC's adherence to all contract documentation requirements, including the following items:

- ◆ doing quality work per the contract
- ◆ keeping As-Built Drawings updated and current
- ◆ maintaining payroll compliance and reporting
- ◆ paying subcontractors
- ◆ maintaining manpower compliance and reporting
- ◆ submitting certificates of product compliance
- ◆ submitting test results/reports
- ◆ submitting an updated project schedule
- ◆ adhering to the Schedule of Values

The Consultant must, on FAA Grant-eligible projects, fill out the appropriate Breakout Form in Exhibit 25 or 26, which breaks out eligible and ineligible costs, and attach it to the requisition. The Consultant must also insure that the Force Account Time Sheet in Exhibit 27 is collected weekly, if grant eligible, so that Massport may recoup the in-house MPA Survey, Inspection and QA personnel costs.

12. Project Photographs

The RE must select appropriate project subject matter and photograph it to document the project's evolution. The RE must take some photographs, 35mm slides or digital photos monthly, from the same location, looking in the same direction. The RE must maintain a working camera (35mm or digital) at the site and must be prepared to take unscheduled photographs relative to the volume and importance of the construction activities. The photographs should highlight all unique activities and conditions such as unforeseen site conditions that may or may not lead to extra work. If the RE uses a 35mm camera, the images should be converted to a Massport-confirmed digital format and delivered to Massport on a photo CD. The photographs must be identified as shown in Exhibit 37.

13. Coordination with Facility Representatives

The RE must ensure that all major aspects of construction are fully coordinated in a timely manner with the Facility Representative and that the Contractor is continuously informing the Engineer of the project's progress, construction schedules and plans, and any changes to the work. The Consultant should also verify that the Facility Representative is fully satisfied with the GC's efforts to mitigate all negative impacts to the traveling public and Massport.

14. Coordination with City and State Agencies

The RE should ensure that the GC has all the necessary permits and that the contractor is properly and effectively coordinating all the construction work with all applicable City, State and Federal Agencies.

15. Job Site Project Records

The RE must maintain complete and orderly job site records, including the following information:

- ◆ the contract documents
- ◆ the Daily Log with interpretations
- ◆ verbal instructions given to the GC
- ◆ any occurrence or work that might result in a claim for a change in contract sum or contract time
- ◆ payment and wage rate records
- ◆ material slips and Certifications
- ◆ RFIs and RFI Log
- ◆ construction photographs
- ◆ Change Order Proposals and Change Orders
- ◆ the Contractor's library of guarantees, certificates, maintenance and operation manuals and all other appropriate records

16. As-Built Drawings

The RE should verify weekly that the GC is maintaining a current set of documents according to Authority's requirements of MPA Standard Specification Section 01050 entitled "Record Documents and Field Engineering." The Consultant and the RE must coordinate the submission and processing of As-Built Drawings for the project, and may not forward the monthly pay requisition until the Contractor's As-Built Drawings have been updated to current status.