

## **Part 1           General**

### **1.1           DEFINITIONS**

- .1   Activity: element of Work performed during course of Project. Activity normally has expected duration, and expected cost and expected resource requirements. Activities can be subdivided into tasks.
- .2   Bar Chart (GANTT Chart): graphic display of schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars. Generally Bar Chart should be derived from commercially available computerized project management system.
- .3   Baseline: original approved plan (for project, work package, or activity), plus or minus approved scope changes.
- .4   Construction Work Week: Monday to Friday, inclusive, will provide five day work week and define schedule calendar working days as part of Bar (GANTT) Chart submission.
- .5   Duration: number of work periods (not including holidays or other nonworking periods) required to complete activity or other project element. Usually expressed as workdays or workweeks.
- .6   Master Plan: summary-level schedule that identifies major activities and key milestones.
- .7   Milestone: significant event in project, usually completion of major deliverable.
- .8   Project Schedule: planned dates for performing activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout project life cycle.
- .9   Project Planning, Monitoring and Control System: overall system operated by Departmental Representative to enable monitoring of project work in relation to established milestones.
- .10   Critical path: this is a sequence of activities that determines the duration of the project. The critical path is usually the longest path between the beginning and end of the project.
  - .1   The critical path is usually the one for which all activities have a margin lower than or equal to a certain value, often set to zero.

### **1.2           REQUIREMENTS**

- .1   Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
- .2   Plan to complete Work in accordance with prescribed milestones and time frame.
- .3   Limit activity durations to maximum of approximately [10] working days, to allow for progress reporting.

- .4 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.
- .5 Ensure that the planning process is repeated and that it always leads to a downward treatment, with additional details as planning goes on and decisions made with regard to the options and extra/replacement solutions.
- .6 Ensure the implementation timetable is respected through a close follow-up of the works to ensure integrity of the critical path, comparing the actual progress of individual activities with the expected progress; review the progress of incomplete ongoing activities.
- .7 Carry out frequent checks so as to immediately detect the causes of delays and eliminate them.

### **1.3 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to Departmental Representative within fifteen (15) working days of Notice of Acceptance of Offer, Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.
- .3 Submit Project Schedule to Departmental Representative within five (5) working days of receipt of acceptance of Master Plan.

### **1.4 PROJECT MILESTONES**

- .1 Project milestones form interim targets for Project Schedule.
  - .1 The final assembly of the wooden cribs must be completed no later than 23 weeks after the contract is award.
  - .2 The provisional certificate of completion (substantial completion) of the project must be issued latest on 24 March 2017.
  - .3 The certificate of completion must be issued latest on 26 May 2017.

### **1.5 MASTER PLAN**

- .1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar Chart (GANTT).
- .2 Departmental Representative will review and return revised schedules within five (5) working days.
- .3 Revise impractical schedule and resubmit within five (5) working days.
- .4 Accepted revised schedule will become Master Plan and be used as baseline for updates.

### **1.6 PROJECT SCHEDULE**

- .1 Develop detailed Project Schedule derived from Master Plan.
- .2 Ensure detailed Project Schedule includes as minimum milestone and activity types as follows:

- .1 Start up Meeting
  - .2 Shop Drawings, Samples
  - .3 Permits
  - .4 Mobilization and installation on the site
  - .5 Temporary access and protection
  - .6 Rock filling and repairs of the Berlin wall (axes 43 to 47)
  - .7 Repairs and reinforcement of the Berlin wall (axes 16 to 43)
  - .8 Repairs and reinforcement of the Berlin wall (axes 1 to 15)
  - .9 Cleaning of seabed and dredging.
  - .10 Carpentry.
    - .1 Pre-assembly of cribs before launching
    - .2 Final assembly of cribs
  - .11 Laying of foundation for cribs
  - .12 Launching and ballasting of cribs
  - .13 Final filling of cribs
  - .14 Concreting under and out of water
  - .15 Testing and activation of electrical supply system
  - .16 Prefabricated structural concrete slabs
  - .17 Installation of various elements
    - .1 Lighting
    - .2 Fenders
    - .3 Ladders
    - .4 Mooring bollards
    - .5 Articulated concrete block mats
    - .6 Pavement
  - .18 Rectification of errors
- .3 The detailed implementation schedule must include at least the following important points:
- .1 Mobilization.
  - .2 Sub-contractors mobilization if necessary
  - .3 Bathymetric surveys
    - .1 Before and after dredging
    - .2 After the laying of foundation
  - .4 Disconnection of public services if necessary
  - .5 Provisional delivery of the project.
  - .6 Handing over of documents (manual, annotated plans for TQC, etc).
  - .7 Final delivery of the project.
- .4 Clearly identify the detailed implementation schedule, the critical path of the works and ensure strict monitoring so as to respect it.

**1.7 PROJECT SCHEDULE REPORTING**

- .1 Update Project Schedule once in a week, reflecting activity changes and completions, as well as activities in progress.
- .2 Provide an updated copy of the schedule to the Departmental Representative two (2) days prior to each meeting on the site or at the request of the Departmental Representative.
- .3 Once every month, with each progressive count, provide Departmental Representative with a detailed report which situates progress of work, compares the progress with the baseline schedule and presents current projections, anticipated delays, the impact of these factors and possible mitigating measures.

**1.8 PROJECT MEETINGS**

- .1 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.
- .2 Weather related delays with their remedial measures will be discussed and negotiated.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not used.

**END OF SECTION**