

1 GENERAL

- 1.1 Be responsible for planning and scheduling the Construction Progress Documentation of the Work.
- 1.2 Be responsible for ensuring that Subcontractors plan and schedule their respective portions of the Work. Subcontractor's schedules shall form part of the above mentioned schedules.

2 SCHEDULE MANAGEMENT

- 2.1 A schedule submitted as specified and accepted by Consultant shall become the baseline schedule and shall be used as the baseline for updates.
- 2.2 At each regular progress meeting, review and discuss current construction progress and submittals schedules with Consultant, including activities that are behind schedule and planned measures to regain schedule slippage in key areas on or near the critical path.
- 2.3 Activities considered behind schedule are those with start or completion dates later than the dates shown on the baseline schedule.

3 CASH FLOW CHART

- 3.1 Within 7 days after award of Contract, submit, in form approved by Consultant, cash flow chart broken down on a monthly basis in an approved manner. Cash flow chart shall indicate anticipated Contractor's monthly progress billings from commencement of work until completion.
- 3.2 Update cash flow chart whenever changes occur to scheduling and in manner and at times satisfactory to Consultant.

4 CONTRACT SCHEDULE

- 4.1 Prepare and submit, in a format acceptable to the Owner, the Contract Schedule within 10 Working Days following award of Contract. This schedule, once it is reviewed by the Consultant and Owner and if it meets the project requirements, will form part of the Contract.
- 4.2 Contract Schedule shall be developed using a logic network technique for planning and scheduling.
- 4.3 Contract Schedule shall be submitted for approval in its optimum levelled form. This presentation may be in either a time scaled network or a bar chart form. It shall be subdivided into either work areas or systems as applicable.

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- 4.4 Contract Schedule shall include but not be limited to the following information. Information to be provided in a sufficient level of detail to effectively manage the construction process.
- .1 Starting and ending dates, milestones, and key activities of each activity including the float periods.
 - .2 Work Packages.
 - .3 Manpower requirements for each activity.
 - .4 Order and delivery dates for long delivery Products and major or critical equipment.
 - .5 Interdependency with activities of other Contractors.
 - .6 Dates specified in the Contract Documents.
 - .7 Milestone date[s] for Ready-for-Takeover and Substantial Performance of the Work.
 - .8 Inspection and testing activities.
 - .9 Dates on which specific data will be required for submittal, i.e., Vendor data, shop drawings, samples, etc.
 - .10 Preparation and review of Mock-ups.
 - .11 Shutdown or closure activities.
 - .12 Demonstration and training activities.
- 4.5 Submit updated schedule to the Consultant and Owner monthly indicating as a minimum actual and projected start and finish dates, report date line and progress, activity relationships, float, Contract changes as well as major changes to the schedule.

5 DETAILED CONSTRUCTION SCHEDULE

- 5.1 Prepare and submit a detailed construction schedule within 10 Working Days of final review and acceptance of the Contract Schedule. This schedule, once reviewed and accepted by the Consultant, will be updated and submitted monthly with the Contract Schedule and weekly once the Contractor starts on Site.
- 5.2 This schedule shall cover the construction period. It will show, in detail, activities on a daily basis indicating durations, manpower and constraints. The activities shown on this schedule shall further clarify or detail the activities shown on the Contract Schedule.
- 5.3 The detailed construction schedule shall be presented in a bar chart form.

- 5.4 Include a written report with each updated progress schedule. Indicate work status to date comparing baseline to actual progress, current forecasts, identifying problem areas, anticipated delays and impact on schedule, and planned corrective actions.

6 SUBMITTALS SCHEDULE

6.1 Format and Content:

- .1 Prepare schedule identifying all required Shop Drawing, Product data, and sample submissions, including samples required for testing.
- .2 Prepare schedule in electronic format acceptable to Owner.
- .3 Provide a separate line for each required submittal, organized by Specification section names and numbers, and further broken down by individual Products and systems as required.
- .4 Allow time in schedule for review of submittals and resubmission of submittals, should resubmission be necessary.

6.2 Submission:

- .1 Submit initial schedule to Consultant within 15 Working Days after Contract award.
- .2 Submit schedule in format acceptable to Owner.
- .3 Consultant will review format and content of initial schedule and request necessary changes, if any, within 10 Working Days after receipt.
- .4 If changes are required, resubmit finalized schedule within 5 Working Days after return of review copy.
- .5 Submit updated submittals schedule monthly to Owner and Consultant.

7 PROGRESS RECORDS

- 7.1 Maintain on site, permanent written records of daily progress of the Work. Records shall be open to review by Consultant and Owner at all times and a copy shall be furnished to Consultant on a weekly basis.
- 7.2 Records shall show dates of commencement, progress and completion of various trades and items of work. Particulars pertaining to number of employees of various trades and type and quantity of equipment employed daily, temperature, protection methods and other such data shall be noted.

8 RECORDING ACTUAL SITE CONDITIONS ON AS-BUILT DRAWINGS

- 8.1 Obtain from Consultant an electronic copy of the construction Drawings **and waiver form *Electronic transfer*** for the purpose of creating as-built drawings. Record information in electronic form, clearly identifying as-built deviations from the originally obtained construction Drawings.
- 8.2 CAD drawings of Contract Drawings can be obtained from Consultant at a cost of \$50.00 plus HST per drawing.
- 8.3 Clearly label each drawing as "AS-BUILT DRAWING prepared by _____ (name of Contractor)". Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- 8.4 Authorized deviations from drawings shall be marked in red accurately on one set of drawing prints in a neat, legibly printed manner and shall be dated. Prior to final inspection, neatly transfer the recorded information to a second set of drawing prints of the most recent revision to the drawings and submit both sets to the Consultant.
- 8.5 Maintain as-built drawings up to date as Work progresses. Status of maintained as-built drawings may be considered as a condition for validation of applications for payment. Make as-built drawings available to the Consultant at all times.
- 8.6 Record actual construction including but not limited to the following:
- .1 Accurate dimensioned record of deviations and changes in Work from drawings.
 - .2 Measured depths of elements of foundation in relation to finish first floor datum.
 - .3 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - .4 Measured locations of pipes, ducts, conduits, outlets, fixtures, access panels, and appurtenances, referenced to visible and accessible features of construction.
 - .5 Field changes of dimension and detail.
 - .6 Changes made by Change Orders and Supplemental Instructions
 - .7 References to Shop Drawings, where Shop Drawings show more detail.
 - .8 Do not use as-built drawings for construction purposes.
- 8.7 Accurately record locations of concealed structure, mechanical and electrical services and similar Work not clearly in view, the location of which is required for maintenance, alteration Work and future additions. Do not conceal such Work until the location has been recorded.

- 8.8 Accurately record locations of equipment bases, anchors, concrete pads and roof curbs, sleeves, piping, conduits, ducts, maintenance holes and valves, etc. located either below, outside or within structure.
- 8.9 Where piping, conduits and ducts are underground, underfloor, embedded in concrete or otherwise in inaccessible locations, accurately record with respect to structure column lines or walls and elevations with respect to finished floor levels or grades referenced to the centre line of components.
- 8.10 Accurately record any components which will be in inaccessible locations for Consultant's review before the component is covered, or buried, or made inaccessible.
- 8.11 As-built drawings shall be signed and dated by Contractor.
- 8.12 Submit as-built drawing to Consultant for review and make corrections as directed by Consultant.
- 9 PROGRESS PHOTOGRAPHS**
- 9.1 Concurrently with monthly application for payment, submit digital pictures and drone photography for minimum 6 aerial photos per month in high definition, in format acceptable to Owner, using an online file sharing service, such as Dropbox or SharePoint.
- 9.2 Progress photographs to illustrate the progress of the Work as follows:
- .1 A minimum of 20 pictures that best illustrate the progress on the site.
 - .2 Pictures shall be in focus and properly illuminated; view shall be unobstructed.
 - .3 Pictures shall be taken with a minimum 10 megapixel camera or better such that quality and details can be discerned from photo.
 - .4 Pictures shall either have an accurate date-stamp present in the photo, or be numbered and dated in the digital filename.
- 9.3 Each photograph shall include the following information: The project name, date taken, the period the pictures are taken in, name of photographer, description of view and date of photograph taken, and the monthly application number which the pictures are associated with.
- 9.4 Do not use progress or any other Project photographs for promotional purposes without Owner's written consent.

10 PROGRESS REPORTS

10.1 Prepare a monthly progress report current to the last Friday of each month. The report shall indicate the period covered and include but not be limited to the following:

- .1 Executive Summary.
- .2 Areas of Concern/Action Required.
- .3 Work Accomplished This Period.
- .4 Work Planned Next Period.
- .5 Schedule Status.
- .6 Budget Status.
- .7 Status of Submittals.
- .8 Quality Control.
- .9 Contract Changes.
- .10 Outstanding Actions.

10.2 Submit the monthly progress report such that it is received by the Consultant no later than the Wednesday following the last Friday of the month, regardless of whether or not the Monday is a public holiday.

11 PROGRESS VIDEO AND VIEWING

11.1 Provide internet-capable camera and an active web site, allowing off-site viewing of Place of the Work 24/7. Submit web site address and security access codes to Owner and Consultant.

END OF SECTION