

May 15, 2020

## DEVELOPING A BACK TO WORK PLAN POST COVID-19 – STEPS TO CONSIDER

### Back to Work Post-COVID-19

With restrictions beginning to be lifted to allow construction projects to re-commence work it is of paramount importance that all contracting parties assess the current condition and status of their respective projects and develop a plan for how best to restart work and recover lost time, to the extent possible. This back-to-work plan starts with reviewing whether the assumptions and planning used to develop the baseline project schedule and any subsequent updates are still correct or require modification.

Before discussing the steps that should be considered, we wanted to provide a brief overview of the basics of scheduling.

The primary purpose of a schedule is to provide the end user with the ability to:

- Forecast the time needed to accomplish particular elements of the work and cumulatively establish an overall plan to complete the scope of work within the allotted contract period;
- Monitor progress of the work on a periodic basis to facilitate resolution of current and projected problems in a timely and informed manner; and
- Evaluate decisions that alter the then-current plan for performance.

Modifications to the initial baseline schedule should be limited to the following:

- ✓ issuance of contract change order;
- ✓ verifiable reallocation or change in resources (i.e., 2<sup>nd</sup> tower crane);
- ✓ correction of prior errors in activity durations and/or logic; and
- ✓ recovery of time lost on project.

Simply stated, outside of schedule modifications to account for the above, the only other changes that should be made at the end of the month, or bi-weekly, to the then-current project schedule is to activities on which work was performed to reflect a change in: 1) percent completion; and 2) remaining duration.

Provided below is a checklist for firms to follow to facilitate review and modification to the project critical path method (“CPM”) schedule to facilitate the re-commencement of work on the project post-COVID-19 and provide a basis for measurement of the delays / impacts that may be attributed to COVID-19 caused events:

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*A poorly developed schedule pre-COVID-19 is still a poorly developed schedule post-COVID-19.*

*A properly constructed schedule pre-COVID-19 may become a poorly developed schedule post-COVID-19, unless modifications are made.*

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### **Step 1: Pre-COVID-19 Project Schedule Review**

A poorly developed schedule pre-COVID-19 is still a poorly developed schedule post-COVID-19. Prior to experiencing the ill effects of the COVID-19 Pandemic, the then-current project schedule should have been updated to reflect progress achieved at the time of the ordered shutdown and should serve as the project schedule for review. Thus, it will be necessary to review the pre-COVID-19 schedule to confirm that progress is reported correctly and that significant errors in logic and inaccurate reporting of progress do not exist. It is important that the schedule reviewer does not merely look to re-evaluate the pre-COVID-19 schedule to develop an overly optimistic or pessimistic outlook for projected project completion, or to rethink the means and methods for which it intends to employ on the project.

Should it be necessary to incorporate a new activity(ies) or modify logic, these changes should be inserted into the project schedule through the use of fragmentary networks (“Fragnets”) as is discussed further below. The basis for each change should be documented for use in performing the CPM Schedule Analysis under Step 3.

These correction or adjustments to the project schedule are not intended to account for impacts or delays attributable to COVID-19, but rather to ensure that the schedule used to forecast the recommencement of work accurately reports progress achieved pre-COVID-19 and schedule changes that had been implemented but not properly reflected within the project schedule. This schedule needs to be archived and left unchanged for future comparison purposes.

### **Step 2: Post-COVID-19 Project Schedule Modifications**

A post-shutdown schedule now needs to reflect the impact of the shutdown and the modifications needed to reflect the current reality and the means in which the remaining work will be completed. Quoting General Dwight D. Eisenhower during his address of the National Defense Executive Reserve Conference on November 14, 1957:

I tell this story to illustrate the truth of the statement I heard long ago in the Army: *Plans are worthless, but planning is everything.* There is a very great distinction because when you are planning for an emergency you must start with this one thing: the very definition of “emergency” is that it is unexpected, therefore it is not going to happen the way you are planning.

There is wisdom in these words from which we can draw upon in formulating our plans for how best to address the impacts caused by COVID-19 and whether we can make up lost time on projects that were delayed or suspended. These plans will

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planning is  
everything.*

*General Dwight  
D. Eisenhower*

*November 1957*

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be based on our *current* knowledge of precautions that require implementation to comply with COVID-19 health safety guidelines and forecasted timeline for full recovery of the economy.

Below are suggested areas that may require schedule modification to address impacts realized to date and forecasted plans for completing the project and/or recovering lost time. Fragmentary networks should be utilized to incorporate these schedule logic modifications in a two-step process. A fragnet represents a small grouping of activities that is developed to project the order and sequence of new and/or revised work activities required to perform added or changed scope. Upon development of the fragnet, and review / approval by the owner if required under the contract, it is inserted into the schedule to re-calculate the now-projected project completion. A comparison of the projected completion date before and after project incorporation of the schedule fragnet is then performed to measure the impact of the fragnet or project completion.<sup>1</sup>

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*Utilize  
fragmentary  
networks to  
incorporate  
schedule logic  
modifications  
in a two-step  
process.*

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### **Schedule Documenting Process**

The following process is recommended:

1. Copy & Assign Schedule – after saving and archiving a copy of the pre-COVID-19 schedule, the schedule should be copied and assigned a new project identifier to designate the post-COVID-19 baseline schedule.
2. Develop detailed fragnets to incorporate changes, additional work and extra work into the project work schedule to reflect modifications attributed to COVID-19. These detailed sub-networks shall include all necessary activities and logic connectors to describe the work and all restrictions on it, including:
  - a. COVID-19 Activities – add activities for remobilization, site-cleanup and other work that would not have been required absent the project suspension should be added.
  - b. Predecessor and Successor Logic / Relationships – relationships between activities typically fall into one of three categories: contractual, physical or preferential. Contractual relationships are specified phasing or milestone requirements that the contractor is contractually required to achieve before subsequent phase or succeeding work may proceed. Physical relationships imply that the successor work is dependent upon the completion of preceding work. Preferential relationships are often dictated by subjective means and methods employed by the contractor,

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<sup>1</sup> Reference Attachment “A”.

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*It is important that a detailed project record be maintained to identify the basis for the introduction of schedule modifications to the initial baseline schedule.*

*In other words, simply stating that the change was to mitigate the ill effects of COVID-19 is not sufficient.*

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including available labor resources. Take these relationships into consideration when revising the schedule.

It is anticipated that work schedules will require re-evaluation the initial planned sequence of work to accommodate health safety restrictions, while attempting to recover, or minimize, lost time caused by delays or shutdowns attributed to COVID-19. Modifications to schedule predecessor and successor logic may be required to reflect:

- i. required changes in contractual milestones;
  - ii. change in the initial means and methods the contractor planned to employ but has to modify due to COVID-19.
  - iii. acceleration measures proposed to recover lost time caused by COVID-19, including shift work, overtime, weekend work, etc.
- c. Constraints – used to restrain an activity from starting prior to or after a specific event that is not dependent upon other work activities. When used properly, these typically represent dates for procurement of materials, seasonal restrictions, contractual phasing requirements, site access, inspections, permit issuance, etc. Verification of the scheduled dates for equipment and material deliveries, issuance of permits, regulatory inspections, etc. should be performed and modified as necessary.
- d. Calendars – scheduling software allows the creation of multiple calendars to define specific contract requirements or restrictions on work such as non-workdays (e.g., holidays and weekends, seasonal, weather or shutdown non-work periods). Each activity in the schedule can be assigned a calendar to define work periods. A new calendar(s) should be added to reflect the following changes that may have been caused by the COVID-19 Pandemic:
- i. days when reduced work hours are in effect, including restrictions on the number of workers that may be permitted on-site or within specific worksite locations;
  - ii. staggering of work schedules to comply with social distancing requirements and minimize site congestion; and
  - iii. change in site access affecting work hours pre-COVID-19.

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*By updating both the pre-COVID-19 and post-COVID-19 modified schedules at the normal monthly interval the contractor is preserving a record that will allow real time evaluation of whether proposed schedule modifications are successful.*

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- e. Activity Coding – unique codes or other identifiers are used to define work responsibility (i.e., trade), project site location (e.g., 1<sup>st</sup> floor), change order work and to designate whether work is being performed outside of normal construction work hours (e.g., shift work). Modifications to activity coding may be required to reflect:
  - i. re-assignment of work activities to a different or replacement trade;
  - ii. work tasks associated specifically with COVID-19; and
  - iii. work being performed as shift work or on a reduced workhour schedule to allow staggering of the workforce.
- 3. The saying that *time is money* is a reality for owners and contractors evaluating whether to employ acceleration measures to achieve an earlier opening or recover lost time to maintain the contractual completion date. These fragments are inserted into the newly assigned post-COVID-19 baseline schedule (reference Step 1) and processed to determine the potential impact that these proposed schedule modifications have on the forecasted project completion date.

The pre-COVID-19 and post-COVID-19 modified schedule should be reviewed with the owner to determine acceptance of the proposed modifications and/or whether other mitigation measures need to be considered.
- 4. Upon acceptance by the owner, both the pre-COVID-19 and post-COVID-19 modified schedules shall be updated at the normal periodic (typically monthly) interval until such time as the recovery to the project completion has occurred (i.e., no longer forecasted as occurring but actual progress has recovered the lost time).

### **Step 3: Quantifying Time-Related Impacts**

Utilizing the as-built schedule at project end or at such time as the COVID-19 crisis is behind us and the construction industry is permitted to return to normalcy, a retrospective schedule delay analysis should be performed. Schedule delay analyses performed after all work is complete represent a *look back* at progress that was recorded and is used as support to measure/quantify delay.<sup>2</sup> The accuracy of such a retrospective analysis is dependent on the accuracy and completeness of the

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<sup>2</sup> Reference Attachment “B”.

as-built information that has been recorded and the documentation that has been preserved to associate the impacts that were realized to a specific event(s).

This includes the recording of when health safety measures were implemented or restrictions lifted. Such information will be necessary to quantify the inefficiencies that may be attributed to precautions mandated by health safety guidelines including wearing personal protection equipment (“PPE”), testing of employee temperatures before entering worksite, etc.

If performed properly, Steps 1 and 2 will provide the framework for performing this retrospective analysis and quantifying the time-related impacts attributable to the COVID-19 Pandemic.

### **In Summary**

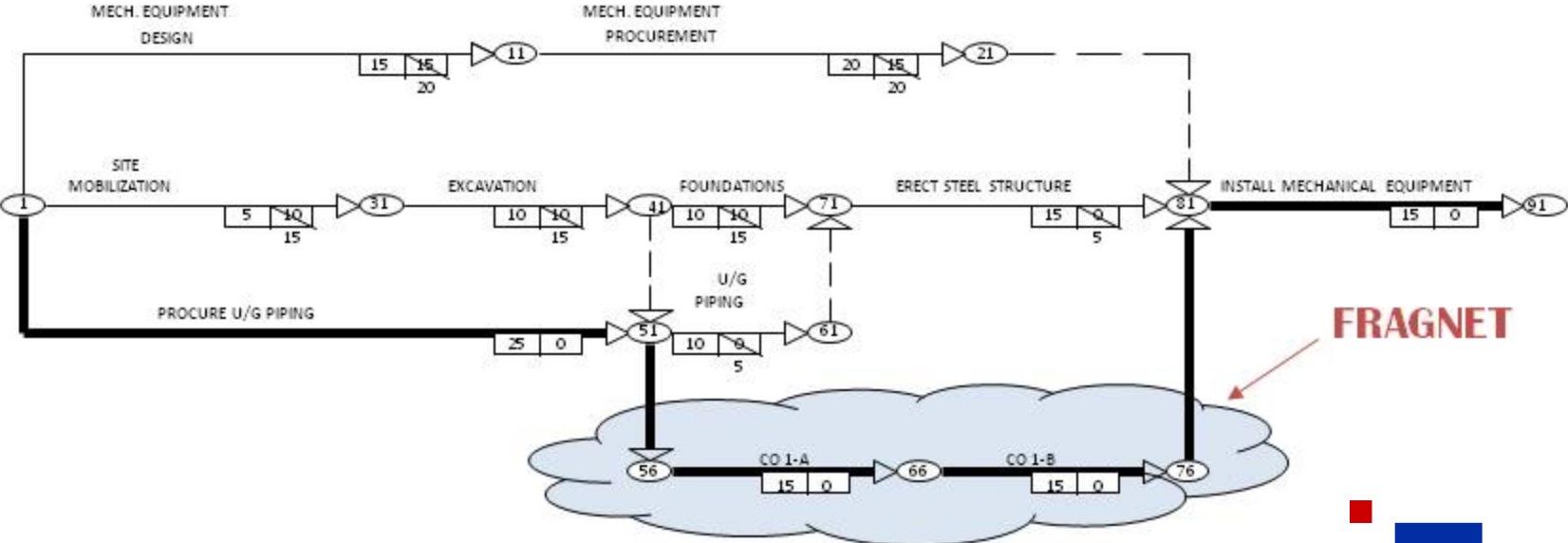
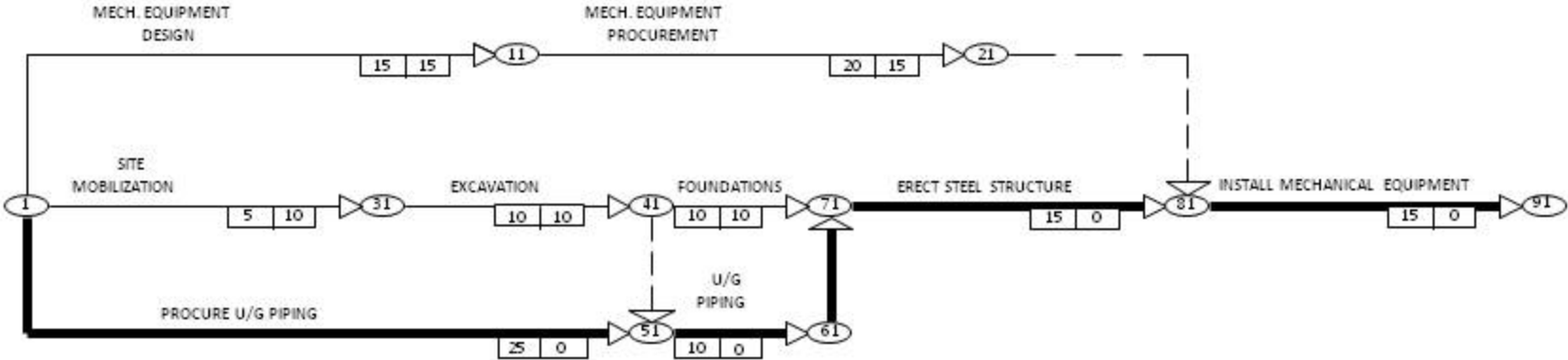
It is anticipated that the current pandemic crisis will create cost and performance impacts that will negatively impact the ability for contractors to complete work within the budget and time requirements of the contract, as modified, pre-crisis. In an effort to mitigate these impacts, certain steps will need to be taken to re-commence work and develop a plan forward. A well thought out plan for performance is essential for this to occur as it will provide the owner and contractor the ability to measure progress and evaluate, in real time, whether modifications to the initial project schedule are successful or require re-evaluation. RMC has briefly outlined the steps that should be considered to develop this back-to-work plan and preserve a project record of mitigation efforts attempted to minimize the impacts caused by the COVID-19 Pandemic. Applying these proper dispute avoidance, documentation and resolution principles will also place the owner and contractor in a position to fairly address the compensation that the contractor may be contractually entitled to recover from the ill-effects of the COVID-19 pandemic.

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Resolution Management Consultants, Inc. (RMC) is a nationally recognized consulting firm headquartered in Marlton, NJ, specializing in avoiding, minimizing or resolving problems that may evolve during the design and construction process. Founded in 1993 by veterans in the construction contracting and engineering professions, RMC has assisted numerous private owners, public (city, state and federal) agencies and contractors in either achieving project goals or resolving cost and time disputes between the contracting parties. The collective experience of our professional staff encompasses all phases of the design and construction process, including engineering, construction management, and accounting. For more information on how we may be of assistance, please contact James F. Gallagher, P.E., F.ASCE ([j.gallagher@resmgt.com](mailto:j.gallagher@resmgt.com)) or Jeffrey B. Kozek, CFCC ([j.kozek@resmgt.com](mailto:j.kozek@resmgt.com)) or by telephone at 800/390-8800 or direct at 856/985-5000.

# Attachment A

## Change Order Fragnet



# Attachment B

## Time Impact Approach

### CURRENT PROJECT SCHEDULE

