

Revised Recovery Programme

Preparation Practical Guide Rev.00

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Preface

This document aims to guide throughout the process of preparing and submitting the projects revised or recovery programmes. Thus, the common challenge encountered whilst preparing the said programmes will be demonstrated within these pages and how to overcome these challenges.

Initially, construction projects progressively suffer from delays throughout their lifecycle, whether such delays are attributable to the contractor being that from lack of resources, poor workmanship, delayed delivery, ...etc. or being attributable to the Employer in terms of design changes, specifications, ...etc., or in some cases extend beyond both parties (e.g., pandemics, force of nature, ...etc.).

In order to properly monitor the progress of the project and reflect such incidents and/ or circumstances on the project's programme, the terms Revised or Recovery programmes come to mind as these terms are correlated with the tools used to reflect the impact of such incidents/ circumstances within the project's programme.

Preparing Revised/ Recovery programmes require certain data to be implemented in order to reflect an accurate impact, to the extent possible, of the incidents and/ or circumstances that occurred during the project lifecycle. The most common terms and fundamentals that are used, are defined hereinafter along with the respective processes for ease of reference and guidance.

The common challenge encountered during preparing such programmes is when the Project's Planned Value [PV] being not equal to the project's Earned Value [EV], and overcoming this issue is essential during the preparation process, this has been averted through several endeavors.

Whilst such endeavors have their own pros and cons, the most efficient and effective one by far, is splitting the In-Progress activities as it delivers accurate results (viz; PV exactly matches EV) with minimal efforts.

Splitting the In-Progress activities will be thoroughly explained within this document.

1 Essential Terminologies while Preparing Revised/ Recovery Programme

In order to prepare either Revised or Recovery programmes, we need to be familiar with the commonly used terminologies in this regard. Among which are:

1.1 Revised/ Recovery Programme

Revised and Recovery programmes are two faces of the same coin that are prepared and submitted to be considered as a baseline programme for the upcoming projects updates, the following table summarizes the differences between the Revised and Recovery programmes:

#	Point of Comparison [POC]	Revised Programme	Recovery Programme
1	Definition	The programme used to implement the changes occurred as a consequence of excusable delays that was granted through an Extension of Time [EOT] claim or in case of an acceleration is directed by the Employer	The programme used to implement the replanning measures occurred as a consequence of non-excusable delays
2	Contractual Dates	Adjust the contractual dates based on the granted Extension of Time [EOT] claim and contract amendment	The original contractual dates are maintained
3	Cost	Approved Variation Orders [VO]s (if any) till the contract amendment cutoff date must be implemented within such programme	VOs may be implemented (if any)
4	Mitigation Measures	May or may not be implemented if the granted EOT claim covers all the encountered delays	The methods used are either Crashing or fast tracking
5	Compensation	Granted EOT and associated prolongation costs [Employer's Delay]	Neither time nor cost [Contractor's Delay]
6	Implementation Method (In This Case)	Splitting the In-Progress activities	Splitting the In-Progress activities

Table 1 Revised Programme vs. Recovery Programme

1.2 Contract Amendment

A contract amendment is a change, correction, clarification, or modification to contract that has already been signed.

A contract amendment leaves the original contract intact. However, it can be used to clarify details that were left out before, or to address a new need that became apparent throughout the course of the project after the contract was originally entered into.

1.3 Provisional Sums

Provisional sums are generally an allowance or estimate of certain items included within the contract price of a construction contract that can be used, in whole or in part, in accordance with the Engineer's instructions and the contract price shall be adjusted accordingly. If a Provisional sum is not used, in whole or in part, such amount shall be deducted from the contract price and the bill of quantities shall be adjusted accordingly and the aforesaid shall be reflected within the project's Revised/ Recovery programme (as the case maybe).

The provisional sums may include:

- Not sufficiently defined, designed or detailed items/ scope to allow an accurate determination of its cost at the time the contract is entered into, or
- Work that the employer may or may not wish to be carried out.

1.4 Free Issue Items

Are the items that may be supplied by the Employer, at his own risk and cost, to the contractor, free of charge, in accordance with the contract as may be instructed by the Engineer during the execution and completion of the works.

1.5 Crashing Technique

Crashing, or in other words so called acceleration, is described as one of the techniques used to recover delays during preparing the recovery programme. It mainly aims to decrease the longest path(s) activities durations in order to complete the project on the contractual dates by increasing the assigned manpower, thus, resulting in achieving such dates whilst increasing the overall cost of the project.

1.6 Fast Tracking Technique

Fast Tracking is described as one of the techniques used to recover delays during preparing the recovery programme. It mainly aims to start the activities simultaneously, or in other words in parallel, in order to complete the project on the contractual dates, thus, resulting in achieving such dates whilst leaving the project suspect of increased risks.

1.7 Multiple Float Paths

A prevailing feature in Primavera P6 that facilitates the calculation of a specific number of critical float path(s) based on the programme's total float or free float.

1.8 Out-of-Sequence Activities

The Out of Sequence activities (illustrated in [Table 3 Out of Sequence Cases](#)) are the ones that have been progressed without sticking to the original sequence intended within the baseline programme.

There are 4 typical cases that are commonly named as "Out of Sequence" activities that have been further clarified in section (5) "*Solving the Out-of-Sequence Activities*" hereunder.

1.9 Invalid Relationships

Occur when:

- A Start Milestone Activity is linked with its successors by a Finish-to-Start [FS] relationship.
- A Finish Milestone Activity is linked with its predecessors by a Finish-to-Start [FS] relationship.

Such invalid relationships can be found under the "*Warnings*" section within the schedule log in Primavera P6.

1.10 Dissolve an Activity

This Primavera P6 feature can be used to remove an activity but still link its predecessors to its successors, in order to maintain the continuity of the schedule's logic. But such activity must have at least one predecessor and one successor.

Dissolving a group of activities simultaneously is not available in Primavera P6.

Be careful with the dissolve feature as it may breads confusion, it works efficiently with Finish-to-Start [FS] relationships, but make sure to verify the logic with other relationships.

1.11 Delete an Activity

This Primavera P6 feature can be used to remove a certain activity or a group of activities simultaneously along with their relationships.

1.12 Global Change

A prevailing feature in Primavera P6 that facilitates adjusting the schedule aspects (i.e., Activities, Activities Resources Assignments, Project Expenses) with a few clicks only.

1.13 User Defined Fields [UDF]s

The User Defined Fields, or the [UDF]s feature, enable planning engineers to assign custom fields and data for the project's various aspects (i.e., Projects, WBS, Activities, Resources, Activities Resources Assignments, ... etc.).

2 Revised/ Recovery Programme Preparation Practical Steps

The below (i.e., [Figure 1 Revised/ Recovery Process Map](#)) Revised/ Recovery process map illustrates the integration between the project departments that are involved in preparing such programme(s). This integration will be of high efficiency if the planning engineers focus on the inputs, tools and techniques implemented, and outputs as it facilitates collecting and analyzing the required/ received data whilst involving all the project teams and members.

The produced output is shared among all the project teams/ members in order to receive the final feedback and upon verification, the programme is submitted for approval to the Engineer.



Figure 1 Revised/ Recovery Process Map

2.1 Variation Orders [VO]s Implementation

The reason behind adjusting the Primavera P6 loaded cash is to match the contract's amendment value while preparing the relevant revised schedule. This adjustment is carried out through the following processes.

2.1.1 Variation Orders [VO]s Process

Variation Orders [VO]s are implemented into the contract through issuing the relevant Contract amendment(s) in order to adjust the total contract price accordingly.

VOs are the approved Notification of Changes [NOC]s, whereas the NOCs are considered as formal notifications issued by the contractor to the Employer/Engineer for a change order to either the project technical specifications or the relevant Issued for Construction [IFC] drawings.

The following flow chart depicts the VOs process mapping:

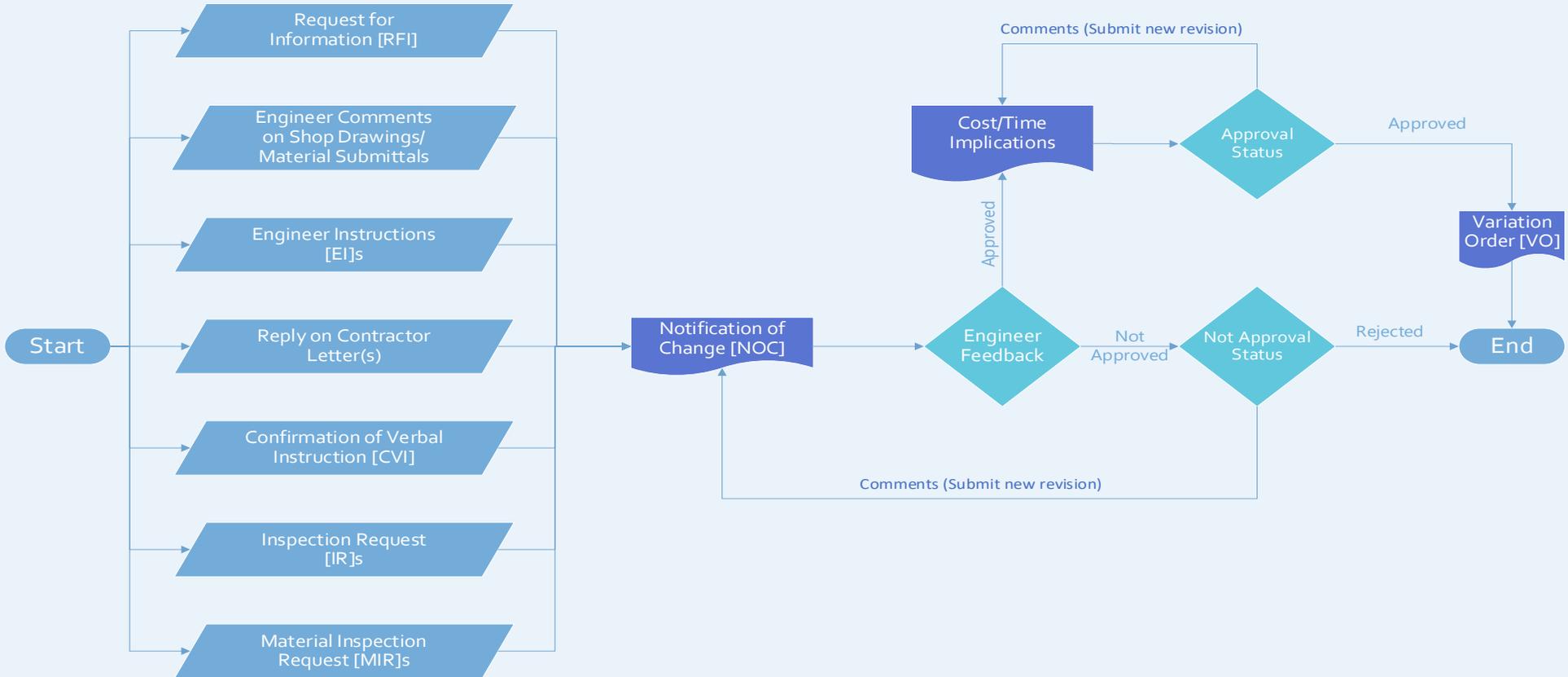


Figure 2 VOs Process Mapping

The contract's amendment value must take into account all the VOs that are issued, signed and approved by all project parties till such amendment's cutoff date and this must also be reflected within the Primavera, up and till the cutoff date for the respective Revised programme.

The table below depicts a sample of the relevant VOs.

Project Name – VOs Log					
		Contract Value		X	
		Total VOs Value		0.07X	
		Adjusted Contract Value		1.07X	
Item	VO no.	NOC no.	NOC Subject	VO amount	Adjusted Contract Sum after VO
01	VO.01	NOC-XXXXXXXX	Omitting	-0.06X	0.94X
02	VO.02	NOC-XXXXXXXX	Adding	0.08X	1.02X
03	VO.03	NOC-XXXXXXXX	Changing	0.05X	1.07X
Total				0.07X	1.07X

Table 2 Sample of Project's VOs Log

2.1.2 VOs Classification

The Project VOs' may include a change in type, specifications, a change in material or the construction methodology, which may include the following:

- **Change in Type** such as changing the flooring finishing type from ceramic to marble, changing the foundation system from shallow foundations to deep foundations, ... etc.
- **Change in Specification** such as changing the dimensions of HDF flooring tiles used, changing reinforced concrete strength, ... etc.
- **Change in Construction Methodology** such as changing the marble cladding installations from the conventional method (i.e., Mortar) to a modern one (i.e., mechanical fixation), ... etc.

Hence, the VOs can be classified into:

2.1.2.1 Addition VOs

Adding new scope of works to the contractor's original scope (e.g., adding new elements to the original design, changing material to be of higher quality/ specifications, ... etc.).

2.1.2.2 Omission VOs

Omitting/Cancelling a portion of the contractor's original scope.

2.1.2.3 Addition/ Omission VOs

Replacing (i.e., adding and omitting) items in the same time to take into account the changes occurred as a consequence of the new design received.

2.1.3 Implementation of the VOs on Project's Revised Schedule

The VOs are implemented into the project's revised schedule to accommodate the amended contract price, which is carried out through the following steps:

2.1.3.1 Addition Scope

- Add the new scope activities to the revised schedule underneath the relevant Work Breakdown Structure [WBS],
- Link these activities in a manner to reflect the anticipated sequence of such works on site,
- Allocate the relevant cost/material and labor units for these activities, and finally, assign the respective codes and calendar(s).

2.1.3.2 Omission Scope

- Dissolve/Delete the activities that reflect the omitted scope and adjust the effected relationships accordingly (if any).

2.1.3.3 Change the Type

- Rename the relevant activities, adjust the original durations, budgeted cost and relationships (if any),
- Change the assigned resources (i.e., material, labor and non-labor) to reflect the new scope.

2.1.3.4 Change the Specification

- Adjust activities' budgeted cost, assigned resources (i.e., material, labor and non-labor) and durations (if applicable).

2.1.3.5 Change the Construction Methodology

- Adjust the Activities' budgeted cost, assigned resources (i.e., material, labor and non-labor), original durations, and relationships (if any).

2.2 Duplicate the (In-Progress) Construction Activities

As previously mentioned, the In-Progress construction activities will be split, such is accomplished by carrying out the following steps:

2.2.1 Filter only the (In-Progress) Activities under the “Construction” WBS

2.2.2 Add the Three User Defined Fields

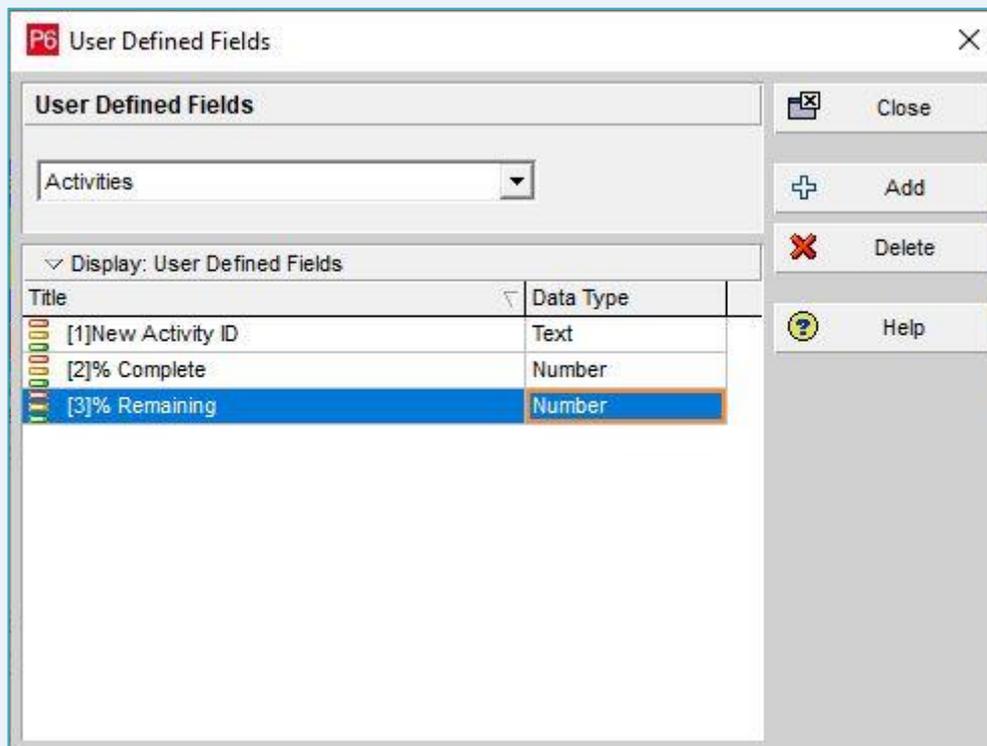


Figure 3 Added User Defined Fields

2.2.3 Fill the Previous User Defined Fields

Fill the following as follows:

- New Activity ID
- % Complete
- % Remaining

2.2.3.1 Fill in New Activity ID UDF

Adding a new Activity ID has several cases, the following figures and points depict how to tackle the obstacles encountered during adding a new Activity ID.

2.2.3.1.1 The Activity's ID Length is Less than or Equal to 18 Characters

If the Activity ID length is less than or equal to 18 characters, apply the following Global Change:

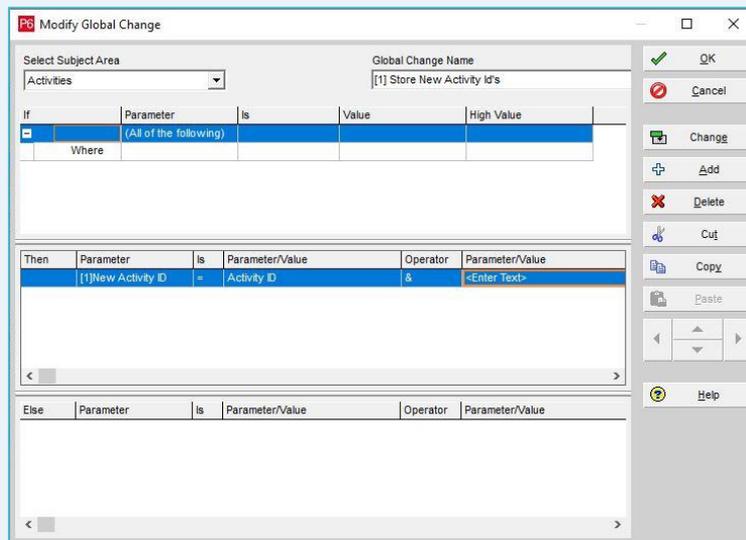


Figure 4 Global Change: [1] Store New Activity id's in Case Activity ID Length is Less than or Equal to 18 Characters – Step (01)

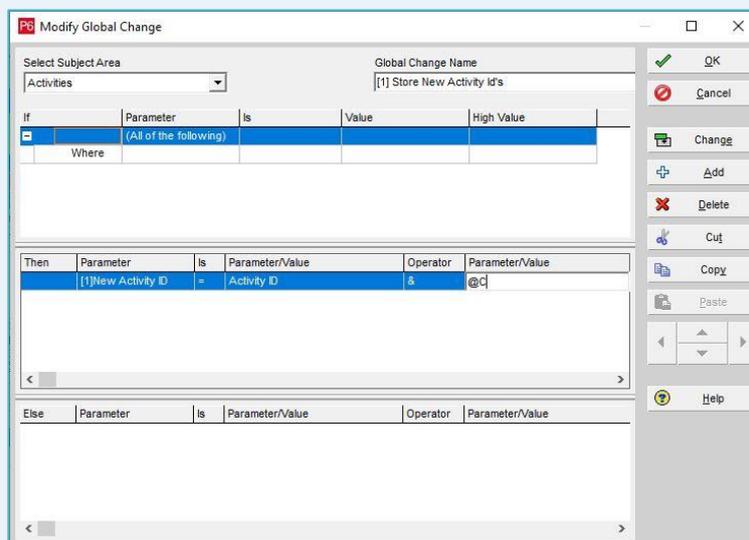


Figure 5 Result of Global Change: [1] Store New Activity id's in Case Activity ID Length is Less than or Equal to 18 Characters – Step (02)

2.2.3.1.2 The Activity's ID Length is Greater than 18 Characters

2.2.3.1.2.1 Case (01) - The Two Fixed Characters are at the Beginning of the Activity's ID

If the two fixed characters are at the beginning of the Activity's ID, Apply the following Global Change.

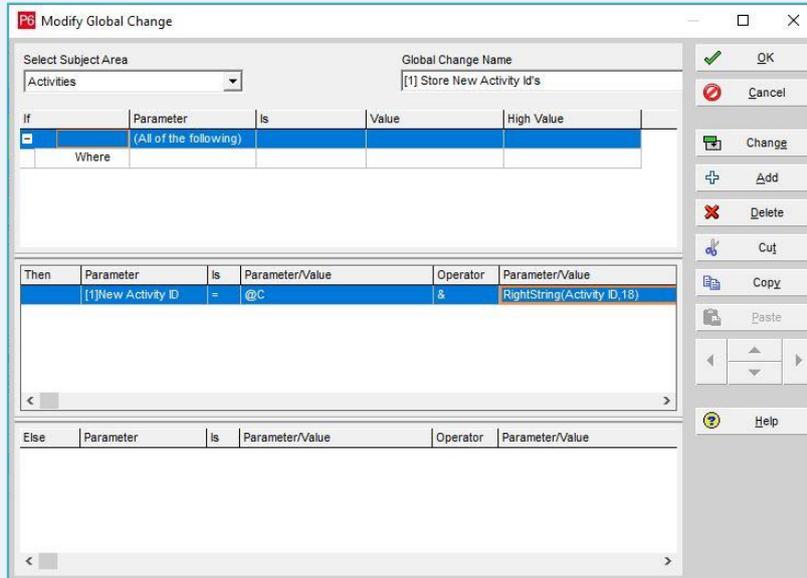


Figure 7 Global Change: [1] Store New Activity id's in Case Activity ID Length is More than 18 Characters – Case (01)

Activity ID	Field	Old Value	New Value
S3-Z01-BLE-1F-FN-001	New Id		@C-Z01-BLE-1F-FN-001
S3-Z01-BLE-GF-FN-001	New Id		@C-Z01-BLE-GF-FN-001

Figure 6 Result of Global Change: [1] Store New Activity id's in Case Activity ID Length is More than 18 Characters – Case (01)

2.2.3.1.2.2 Case (02) - The Two Fixed Characters are at the End of the Activity's ID

If the fixed two characters at the end of Activity ID, Apply the following global change.

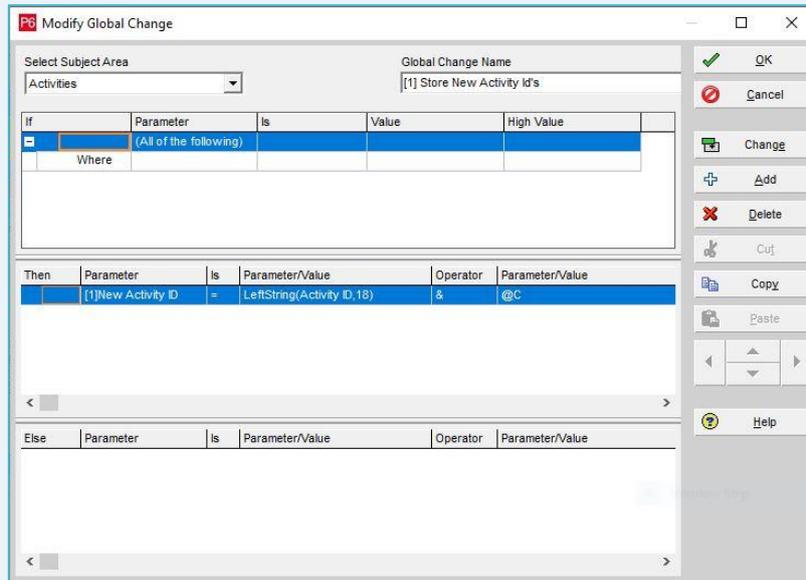


Figure 9 Global Change: [1] Store New Activity id's in Case Activity ID Length is More than 18 Characters – Case (02)

Activity ID	Field	Old Value	New Value
0040-00-UG-G-B31-ZB	New Activity Id		0040-00-UG-G-B31-Z0C
005R-00-UG-G-B31-ZB	New Activity Id		005R-00-UG-G-B31-Z0C
005S-00-UG-G-B31-ZB	New Activity Id		005S-00-UG-G-B31-Z0C

Figure 8 Result of Global Change: [1] Store New Activity id's in Case Activity ID Length is More than 18 Characters – Case (02)

2.2.3.2 Fill in the (% Complete) & the (% Remaining) UDFs

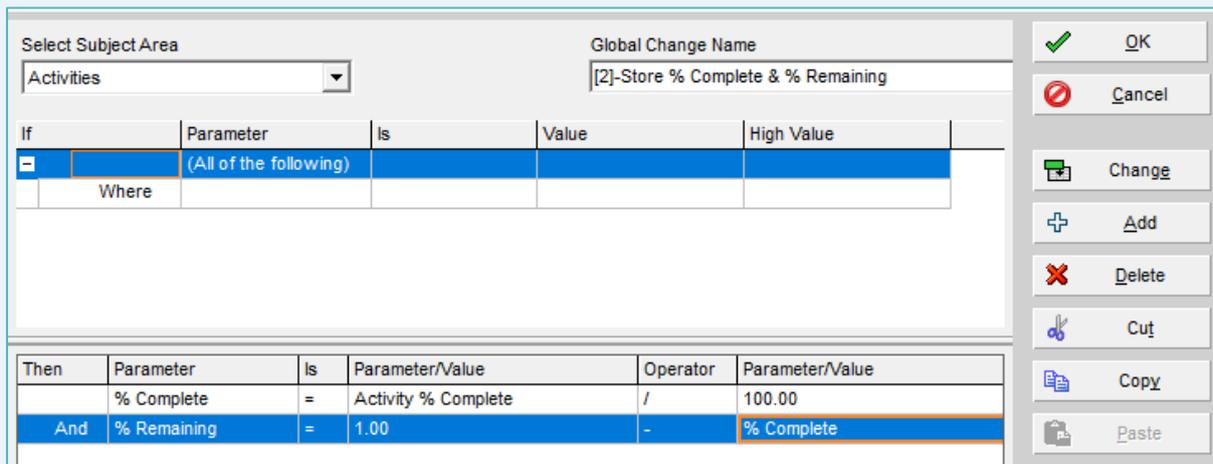


Figure 10 Global Change: [2] Store % Complete & % Remaining User Defined Fields

Activity ID	Activity Name	Start	Finish	Total Float	New Activity Id	Activity % Complete	% Complete	% Remaining
0040-00-UG-G-B31-ZB	PC Footings Works - B31 - ZB	13-Jun-18 A	31-Jul-18	-36	0040-00-UG-G-B31-Z@C	60%	0.60	0.40
0040-00-UG-G-B31-Z@C	PC Footings Works - B31 - ZB	13-Jun-18 A	31-Jul-18	-36	0040-00-UG-G-B31-Z@C	60%	0.60	0.40
005S-00-UG-G-B31-ZB	Shuttering Works - Raft - B31 - ZB	17-Jun-18 A	12-Aug-18	-36	005S-00-UG-G-B31-Z@C	60%	0.60	0.40
005R-00-UG-G-B31-ZB	Reinforcement Works - Raft - B31 - ZB	17-Jun-18 A	29-Aug-18	-36	005R-00-UG-G-B31-Z@C	60%	0.60	0.40
005S-00-UG-G-B31-Z@C	Shuttering Works - Raft - B31 - ZB	17-Jun-18 A	12-Aug-18	-36	005S-00-UG-G-B31-Z@C	60%	0.60	0.40
005R-00-UG-G-B31-Z@C	Reinforcement Works - Raft - B31 - ZB	17-Jun-18 A	29-Aug-18	-36	005R-00-UG-G-B31-Z@C	60%	0.60	0.40

Figure 11 Result of Global Change: [2] Store % Complete & % Remaining User Defined Fields

2.2.4 Copy the In-Progress Construction Activities

In order to start copying the In-Progress activities, the following steps shall be carried out:

2.2.4.1 Set the Group and Sort as default

To set the Group and Sort as default, go to Group & Sort > Default > Ok

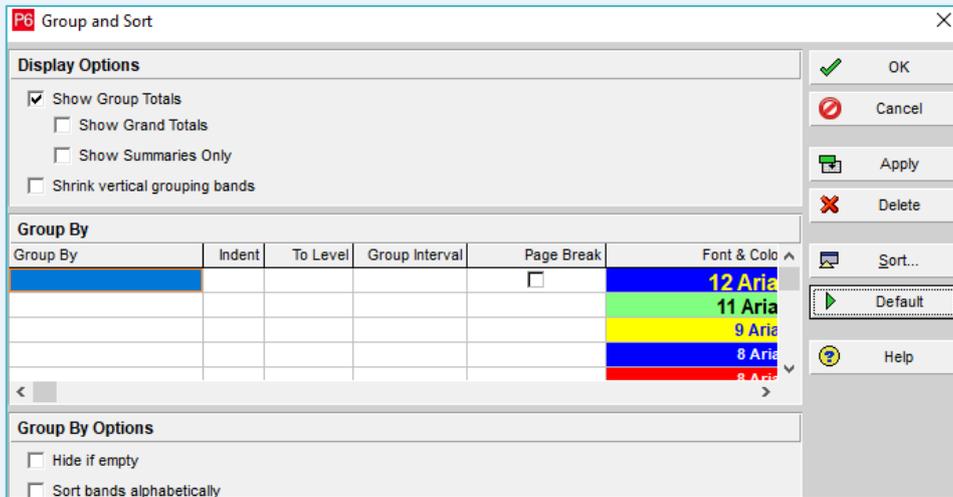


Figure 12 Set Group and Sort as default

Activity ID	Activity Name	Start	Finish	Total Float	New Activity Id	Activity % Complete	% Complete
0040-00-UG-G-B31-ZB	PC Footings Works - B31 - ZB	13-Jun-18 A	31-Jul-18	-36	0040-00-UG-G-B31-Z@C	60%	0.60
005S-00-UG-G-B31-ZB	Shuttering Works - Raft - B31 - ZB	17-Jun-18 A	12-Aug-18	-36	005S-00-UG-G-B31-Z@C	60%	0.60
005R-00-UG-G-B31-ZB	Reinforcement Works - Raft - B31 - ZB	17-Jun-18 A	29-Aug-18	-36	005R-00-UG-G-B31-Z@C	60%	0.60

Figure 13 Activities Tab after Setting Group and Sort as Default

2.2.4.2 Copy and Paste the Filtered Activities

Copy and paste the filtered Activities per the shown figure.

Activity ID	Activity Name	Start	Finish	Total Float	New Activity Id	Activity % Complete	% Complete
0040-00-UG-G-B31-ZB	PC Footings Works - B31 - ZB	13-Jun-18 A	31-Jul-18	-36	0040-00-UG-G-B31-Z@C	60%	0.60
005S-00-UG-G-B31-ZB	Shuttering Works - Raft - B31 - ZB	17-Jun-18 A	12-Aug-18	-36	005S-00-UG-G-B31-Z@C	60%	0.60
005R-00-UG-G-B31-ZB	Reinforcement Works - Raft - B31 - ZB	17-Jun-18 A	29-Aug-18	-36	005R-00-UG-G-B31-Z@C	60%	0.60

Copy Activity Options

Specify the Activity information to be copied

Resource & Role Assignments Notebook

Assignment Codes Steps

Relationships Financial Period Data

Only between copied activities WPs & Docs

Expenses Risks

Activity Codes

Figure 14 Copy and Paste In-Progress Activities

A “Renumber Activity IDs” will appear as the following figure

Renumber Activity IDs

Increment Activity ID based on selected activities

Increment Value:

Auto-number

Prefix: Suffix: Increment Value:

Replace beginning characters

Number of characters: Replace with:

Do not show this dialog again.

Figure 15 Renumber Activity IDs for copied In-Progress Activities

Finally, the following result shall be obtained:

Activity ID	Activity Name	Start	Finish	Total Float	New Activity Id	Activity % Complete	% Complete
0040-00-UG-G-B31-ZB	PC Footings Works - B31 - ZB	13-Jun-18 A	31-Jul-18	-36	0040-00-UG-G-B31-Z@C	60%	0.60
X10000	PC Footings Works - B31 - ZB	13-Jun-18 A	31-Jul-18	-36	0040-00-UG-G-B31-Z@C	60%	0.60
005S-00-UG-G-B31-ZB	Shuttering Works - Raft - B31 - ZB	17-Jun-18 A	12-Aug-18	-36	005S-00-UG-G-B31-Z@C	60%	0.60
005R-00-UG-G-B31-ZB	Reinforcement Works - Raft - B31 - ZB	17-Jun-18 A	29-Aug-18	-36	005R-00-UG-G-B31-Z@C	60%	0.60
X10010	Shuttering Works - Raft - B31 - ZB	17-Jun-18 A	12-Aug-18	-36	005S-00-UG-G-B31-Z@C	60%	0.60
X10020	Reinforcement Works - Raft - B31 - ZB	17-Jun-18 A	29-Aug-18	-36	005R-00-UG-G-B31-Z@C	60%	0.60

Figure 16 Result after Copying In-Progress Activities

2.2.4.3 Change the Activity IDs for the Newly Copied Activities

Use the said Global Change (i.e., Apply New Activity ID in the attached files) in order to ensure that the split activities IDs are equal to new Activity IDs as shown below:

If	Parameter	Is	Value	High Value
	(All of the following)			
Where	Activity ID	contains	X100	

Then	Parameter	Is	Parameter/Value	Operator	Parameter/Value
	Activity ID	=	New Activity Id		

Figure 17 Global Change: [3] Apply New Activity ID

Field	Old Value	New Value
Activity ID	X10000	0040-00-UG-G-B31-Z@C
Activity ID	X10020	005R-00-UG-G-B31-Z@C
Activity ID	X10010	005S-00-UG-G-B31-Z@C

Figure 18 Result of Global Change: [3] Apply New Activity ID

2.2.4.4 Adjust the Assigned Units [Labor, Material, and Non-Labor]

The following figure depicts the assigned units before applying the Global Change for adjusting the assigned Units (i.e., [4]- Split Budgeted Units in the attached file).

Activity ID	Activity Name	Start	Finish	Total Float	Activity % Complete	Budgeted Total Cost	Earned Value Cost
0040-00-UG-G-B31-ZB	PC Footings Works - B31 - ZB	13-Jun-18 A	31-Jul-18	-36	60%	617,500.00	370,500.00
0040-00-UG-G-B31-Z@C	PC Footings Works - B31 - ZB	13-Jun-18 A	31-Jul-18	-36	60%	617,500.00	370,500.00
005S-00-UG-G-B31-ZB	Shuttering Works - Raft - B31 - ZB	17-Jun-18 A	12-Aug-18	-36	60%	1,995,000.00	1,197,000.00
005R-00-UG-G-B31-ZB	Reinforcement Works - Raft - B31 - ZB	17-Jun-18 A	29-Aug-18	-36	60%	4,389,000.00	2,633,400.00
005S-00-UG-G-B31-Z@C	Shuttering Works - Raft - B31 - ZB	17-Jun-18 A	12-Aug-18	-36	60%	1,995,000.00	1,197,000.00
005R-00-UG-G-B31-Z@C	Reinforcement Works - Raft - B31 - ZB	17-Jun-18 A	29-Aug-18	-36	60%	4,389,000.00	2,633,400.00

Figure 19 Activities Layout depicting the duplication of total Budget/ Unit

Apply the following Global Change (i.e., Split the Budgeted Units in the attached files)

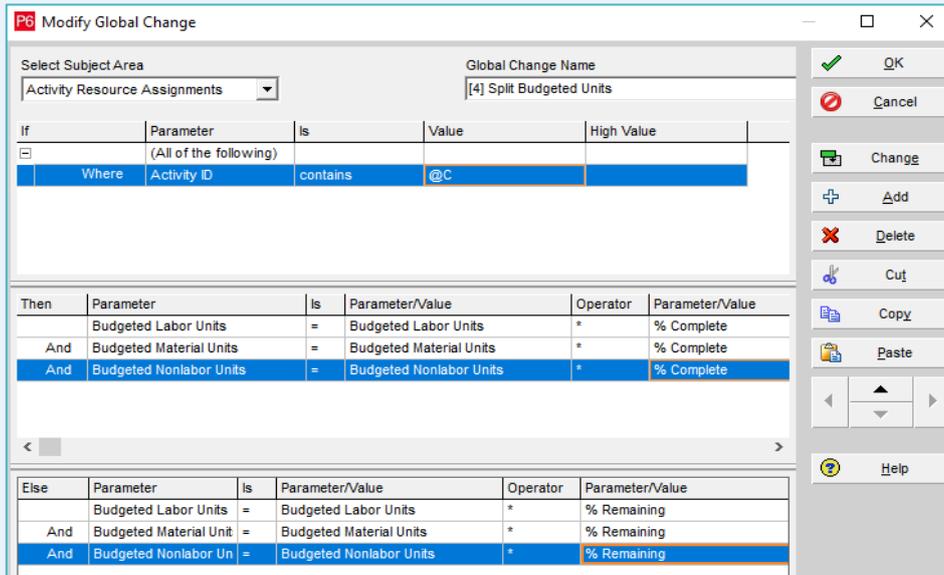


Figure 20 Global Change: [4] Split Budgeted Units

The following result will be obtained after applying the Global Change:

Activity ID	Activity Name	Start	Finish	Total Float	Activity % Complete	Budgeted Total Cost	Earned Value Cost
0040-00-UG-G-B31-ZB	PC Footings Works - B31 - ZB	13-Jun-18 A	31-Jul-18	-36	60%	247,000.00	148,200.00
0040-00-UG-G-B31-Z@C	PC Footings Works - B31 - ZB	13-Jun-18 A	31-Jul-18	-36	60%	370,500.00	222,300.00
005R-00-UG-G-B31-ZB	Reinforcement Works - Raft - B31 - ZB	17-Jun-18 A	29-Aug-18	-36	60%	1,755,600.00	1,053,360.00
005R-00-UG-G-B31-Z@C	Reinforcement Works - Raft - B31 - ZB	17-Jun-18 A	29-Aug-18	-36	60%	2,633,400.00	1,580,040.00
005S-00-UG-G-B31-ZB	Shuttering Works - Raft - B31 - ZB	17-Jun-18 A	12-Aug-18	-36	60%	798,000.00	478,800.00
005S-00-UG-G-B31-Z@C	Shuttering Works - Raft - B31 - ZB	17-Jun-18 A	12-Aug-18	-36	60%	1,197,000.00	718,200.00

Figure 21 Result of Global Change: [4] Split Budgeted Units

2.3 Change the Status for the Old Activities to be Completed

2.3.1 Filter the First Part of the In-Progress Activities

To filter the first part of the In-Progress activities, filter by the Activity IDs that contain “@C”) as shown below:

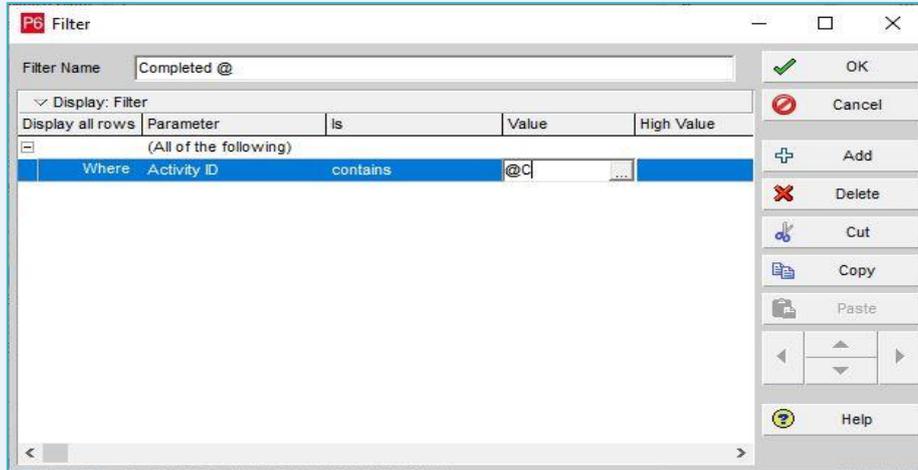


Figure 22 Filter the first part of In-Progress Activities

2.3.2 Set First Part (i.e., Activities that contain “@c”) to be Completed

This step is accomplished through adding the actual finish date (i.e., Data Date [DD]) using fill down option (CTRL+E).

Activity ID	Activity Name	Start	Actual Finish
0040-00-UG-G-B31-Z@C	PC Footings Works - B31 - ZB	13-Jun-18 A	18-Jun-18
005R-00-UG-G-B31-Z@C	Reinforcement Works - Raft - B31 - ZB	17-Jun-18 A	18-Jun-18
005S-00-UG-G-B31-Z@C	Shuttering Works - Raft - B31 - ZB	17-Jun-18 A	18-Jun-18

Figure 23 Set the Actual Finish Date for first part of In-Progress Activities equal Data Date

2.4 Change the Newly Copied Activities Status

Changing the Newly Copied activities status to be (Not Started) is done through the following steps:

2.4.1 Filter the Second Part of the In-Progress Construction Activities

To filter the Second part of the In-Progress activities, filter by the Activity Status to be (Not started)] as shown below:

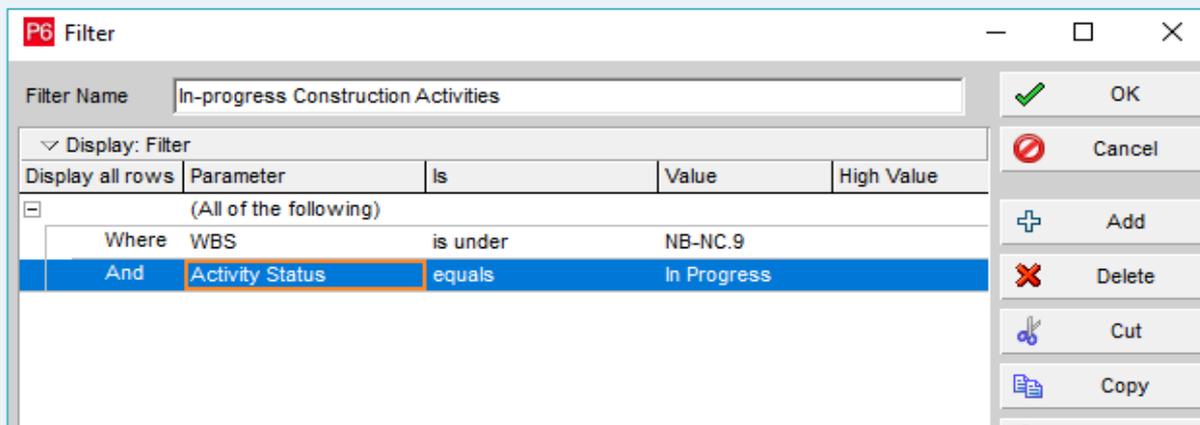


Figure 24 Filter by the second part of the In-Progress Activities

The following figure depicts the activity status before applying the said filter:

Activity ID	Activity Name	Start	Actual Finish	Activity % Complete
0040-00-UG-G-B31-ZB	PC Footings Works - B31 - ZB	13-Jun-18 A		60%
005R-00-UG-G-B31-ZB	Reinforcement Works - Raft - B31 - ZB	17-Jun-18 A		60%
005S-00-UG-G-B31-ZB	Shuttering Works - Raft - B31 - ZB	17-Jun-18 A		60%

Figure 25 The Activity Status Before Applying the Said Filter

The shown activities will be changed from (In-Progress) to (Not Started) by using Global Change in the following step to remove the actuals:

2.4.2 Apply the Highlighted Global Changes [i.e.,]in order

Apply the highlighted Global Changes in the below figure (i.e., De-Status Global Changes):

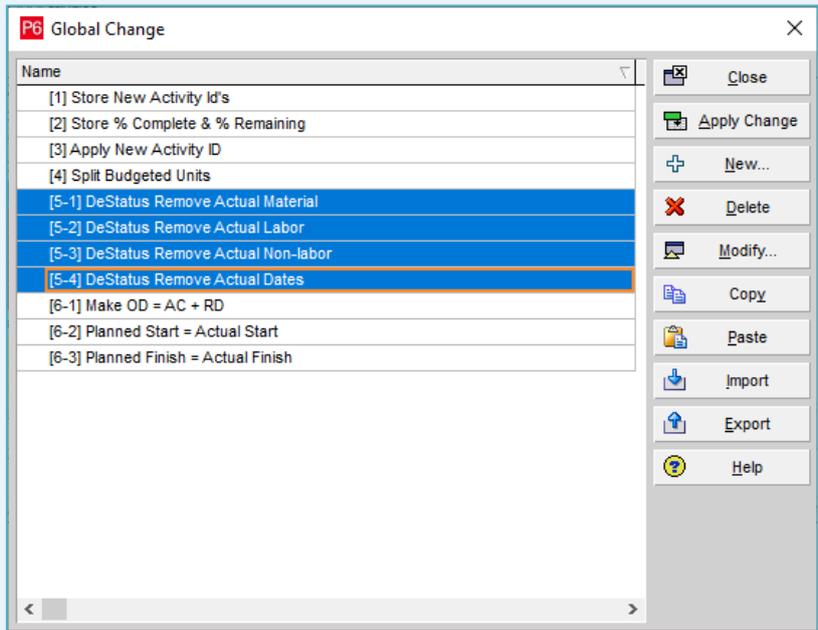


Figure 26 Global Change: [5] DeStatus Activities

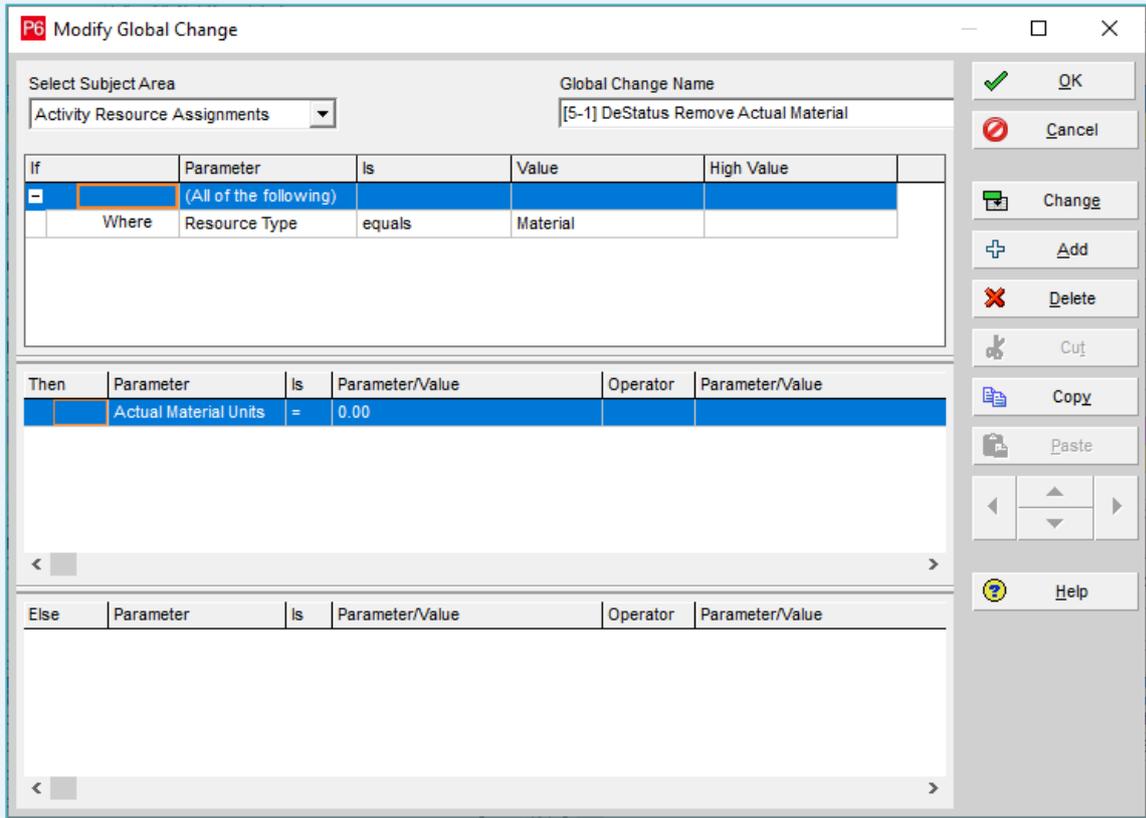


Figure 27 Global Change: [5-1] DeStatus Remove Actual Material

P6 Modify Global Change

Select Subject Area: Activity Resource Assignments | Global Change Name: [5-2] DeStatus Remove Actual Labor

If	Parameter	Is	Value	High Value
	(All of the following)			
Where	Resource Type	equals	Labor	

Then	Parameter	Is	Parameter/Value	Operator	Parameter/Value
	Actual Regular Labor	=	0h		
And	Actual Overtime Labor	=	0h		
And	Actual Regular Cost	=	0.00		
And	Actual Overtime Cost	=	0.00		

Else	Parameter	Is	Parameter/Value	Operator	Parameter/Value
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Figure 29 Global Change: [5-2] DeStatus Remove Actual Labor

P6 Modify Global Change

Select Subject Area: Activity Resource Assignments | Global Change Name: [5-3] DeStatus Remove Actual Non-labor

If	Parameter	Is	Value	High Value
	(All of the following)			
Where	Resource Type	equals	Nonlabor	

Then	Parameter	Is	Parameter/Value	Operator	Parameter/Value
	Actual Regular NonLabor	=	0h		
And	Actual Overtime NonLabor	=	0h		
And	Actual Regular Cost	=	0.00		
And	Actual Overtime Cost	=	0.00		

Else	Parameter	Is	Parameter/Value	Operator	Parameter/Value
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Figure 28 Change: [5-3] DeStatus Remove Actual Non-Labor

Modify Global Change

Select Subject Area: Global Change Name:

If	Parameter	Is	Value	High Value
-	(All of the following)			
Where	Activity Status	is not equal to	Not Started	

Then	Parameter	Is	Parameter/Value	Operator	Parameter/Value
	Activity Status	=	Not Started		

Else	Parameter	Is	Parameter/Value	Operator	Parameter/Value

Toolbar: OK, Cancel, Change, Add, Delete, Cut, Copy, Paste, Help

Figure 30 Change: [5-4] DeStatus Remove Actual Dates

The following results will be obtained after applying the said global changes:

Activity ID	Activity Name	Actual Start	Actual Finish	Activity % Complete
0040-00-UG-G-B31-ZB	PC Footings Works - B31 - ZB			0%
005S-00-UG-G-B31-ZB	Shuttering Works - Raft - B31 - ZB			0%
005R-00-UG-G-B31-ZB	Reinforcement Works - Raft - B31 - ZB			0%

Figure 31 Result of Global Change: [5] DeStatus Activities

Note: After applying the previous steps hereinabove, the following will be found:

1. No construction In-Progress activities.
2. No cost variance.

Then, any residual Out-of-Sequence activities (if any) should be solved as illustrated in the following step.

2.5 Solving the Out-of-Sequence Activities

There are four cases of Out-of-Sequence activities as illustrated within the following table:

Case #	Relationship Type	Predecessor Status	Successor Status	Suggested Solution(s)
Case 1	FS or SS	Not Started	In Progress	There are two options: 1. Change the relationship to (SS) and invert the successor to be the predecessor. 2. or change the relationships to be (SS) + (FF) (in case of Hard logic) and invert the successor to be the predecessor.
Case 2	FS or SS	Not Started	Completed	This case occurs in case of invalid relationships or improper update(s), thus, the suggested solutions for these cases are: 1. In case of invalid relationships, remove these invalid relationships and add new ones (if needed). 2. In case of improper update(s), adjust this update(s) and proceed accordingly.
Case 3	FS or FF	In Progress	Completed	Change the relationship to (SS) and Invert the Successor to be the Predecessor, and add a new one (if needed).
Case 4	FS	In Progress	In Progress	Change the relationship to (SS)

Table 3 Out of Sequence Cases¹

¹ The suggested solutions hereinabove to solve the Out-of-Sequence activities can be implemented either using Primavera or Microsoft Excel.

2.6 Reduce the Relationships Redundancy²

In order to reduce the relationships redundancy, remove the (Successor) relationships for all activities that contain “@C” (i.e., the completed activities as per step no.2.3) and set their new (Successors) to be the newly add ones (i.e., the Not-Started activities as per step no.2.4), such is done through the following steps:

² This optional step only aims to reduce the relationships redundancy by removing the unnecessary ones.

2.6.1 Export the Spreadsheet for Activities and Relationships

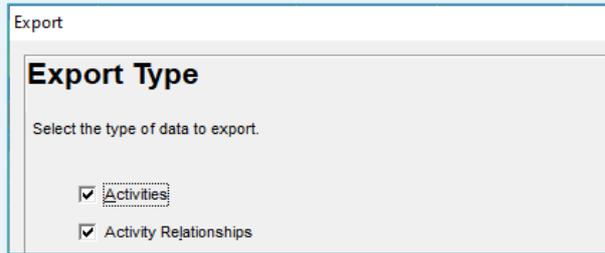


Figure 33 Export Activities & Activity Relationships Spreadsheet

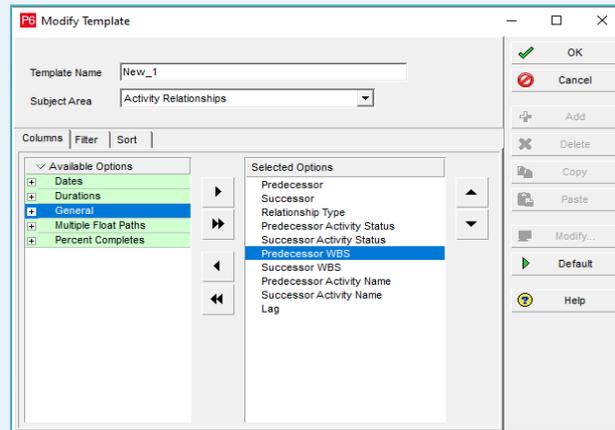


Figure 34 Exported Columns for Relationships Spreadsheet

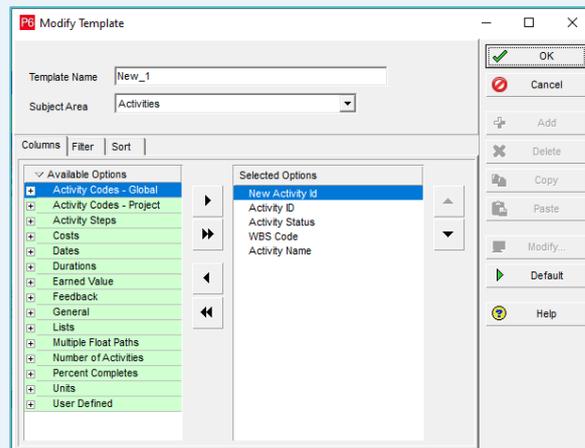


Figure 32 Exported Columns for Activities Spreadsheet

2.6.2 Remove the Existing Successors for the Activities that contain “@C”

Filter the Activities that contain “@C” in the Predecessor column – TASKPRED tab to remove their Successors as follows:

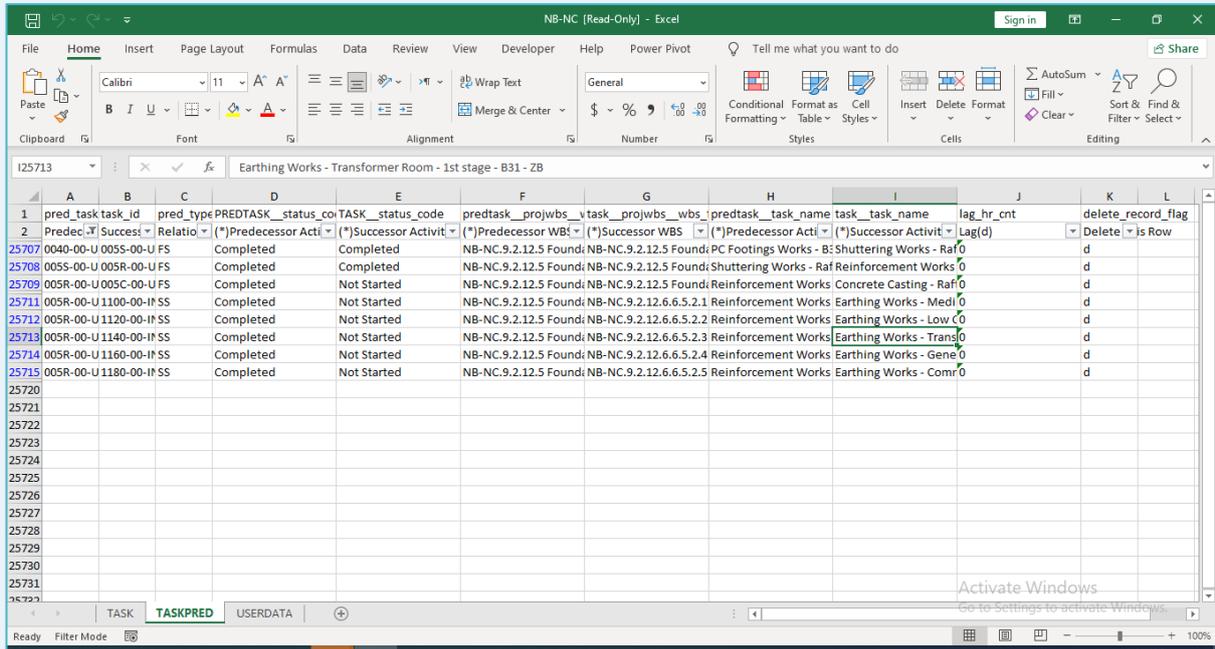


Figure 35 Adding letter “d” to remove successors for completed activities (i.e., First Part)

Clear all filters and then, filter column (K) to be equal to (Blanks) (i.e., rows that don’t include the “d” letter) and delete these rows as follows:

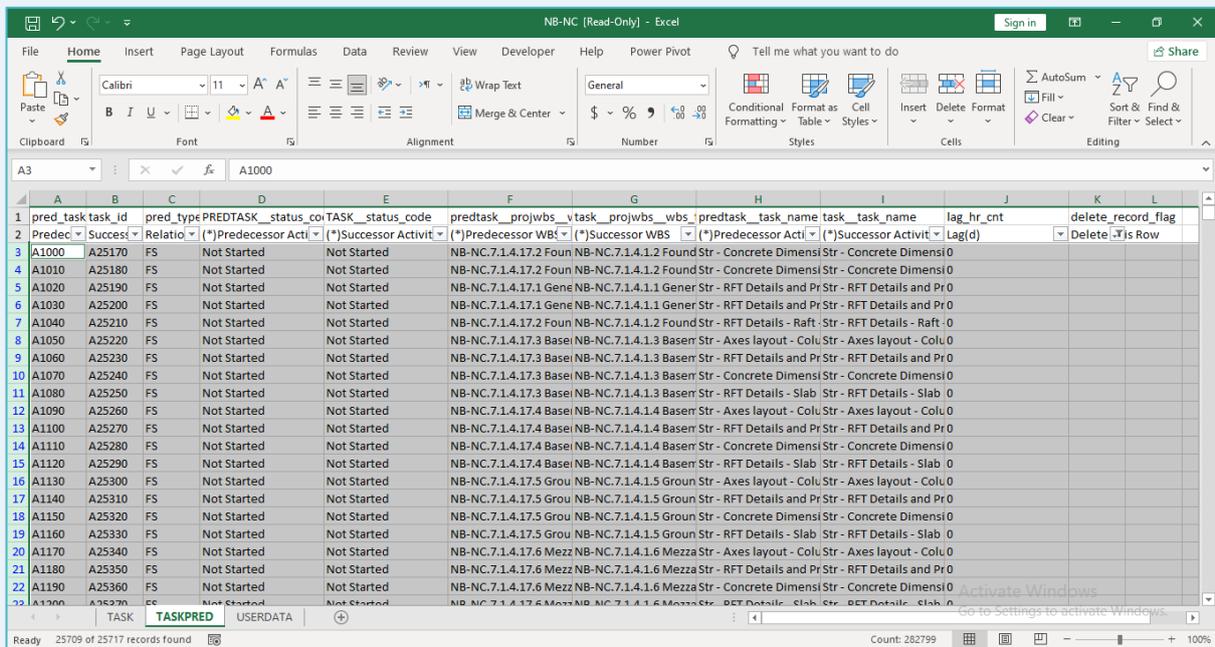


Figure 36 Filter by blank rows (i.e., rows don’t contain letter “d”)

In the “TASK” tab, Apply the following two filters:

- i) Filter column D (i.e., New Activity ID Column [UFD]) to contain “@c”.
- ii) Filter column A (i.e., Activity ID Column) to doesn’t contain “@c”.

The following result will be shown:

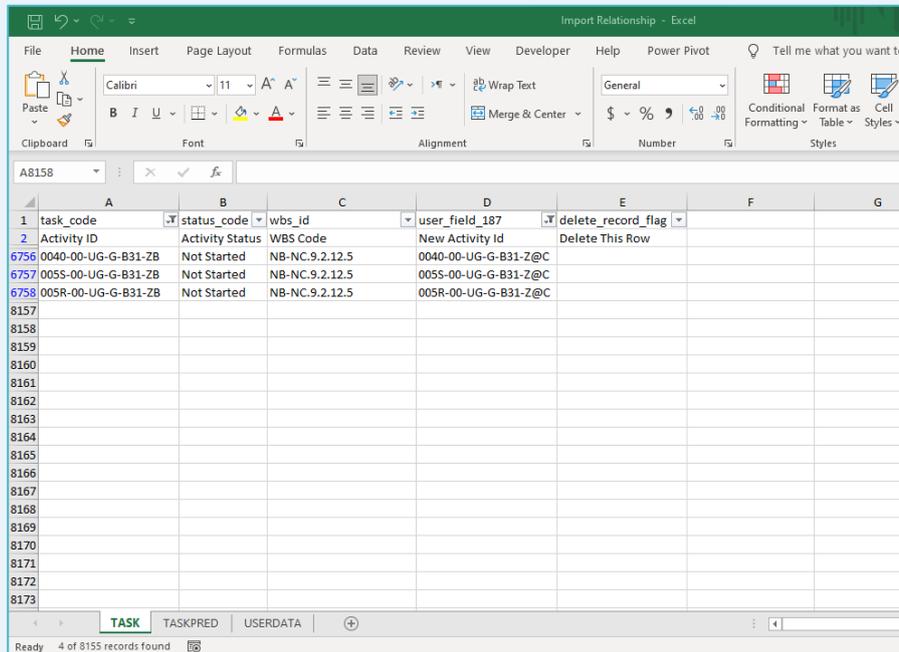


Figure 37 Predecessor and Successor IDs

Copy predecessor & successors ids and paste them in “TASKPRED” tab, as follows:

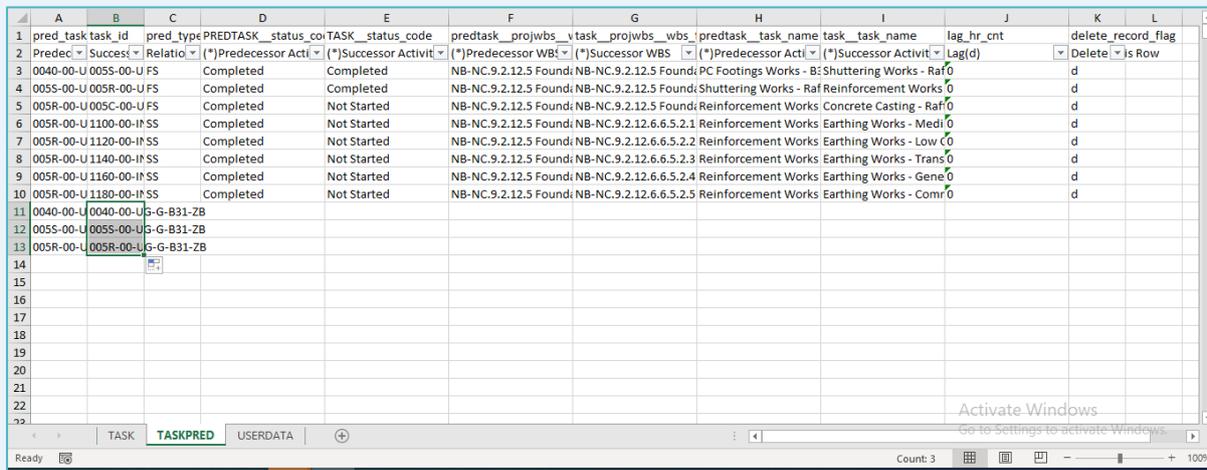


Figure 38 Copy predecessor & successors ids and paste them in “TASKPRED” tab

- *Predecessors ids are the activities that contain “@c”
- *Successors ids are the activities that doesn’t contain “@c”

Remove the unnecessary columns (i.e., from column (D) to column (I))

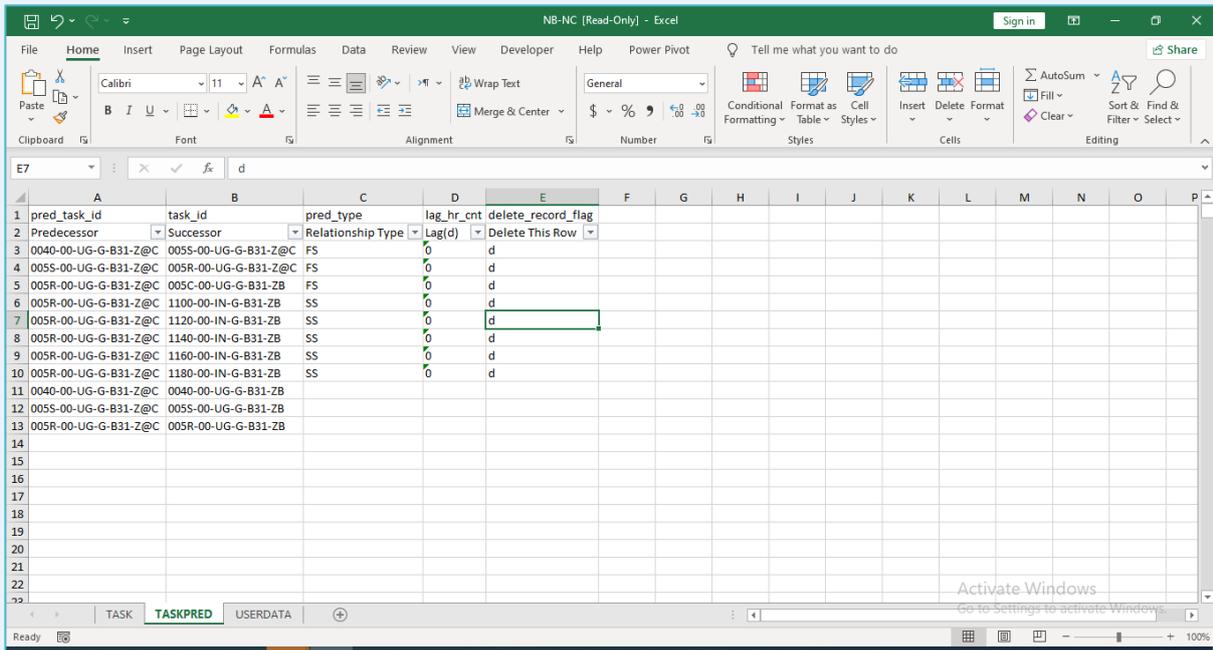


Figure 39 Remove the Unnecessary Columns in "TASKPREP" tab

Fill column (C) by [FS] relationship to link these activities with a (Finish-to-Start) relationship, and then, fill column (D) with "0" to ensure the lag is equal to zero as follows:

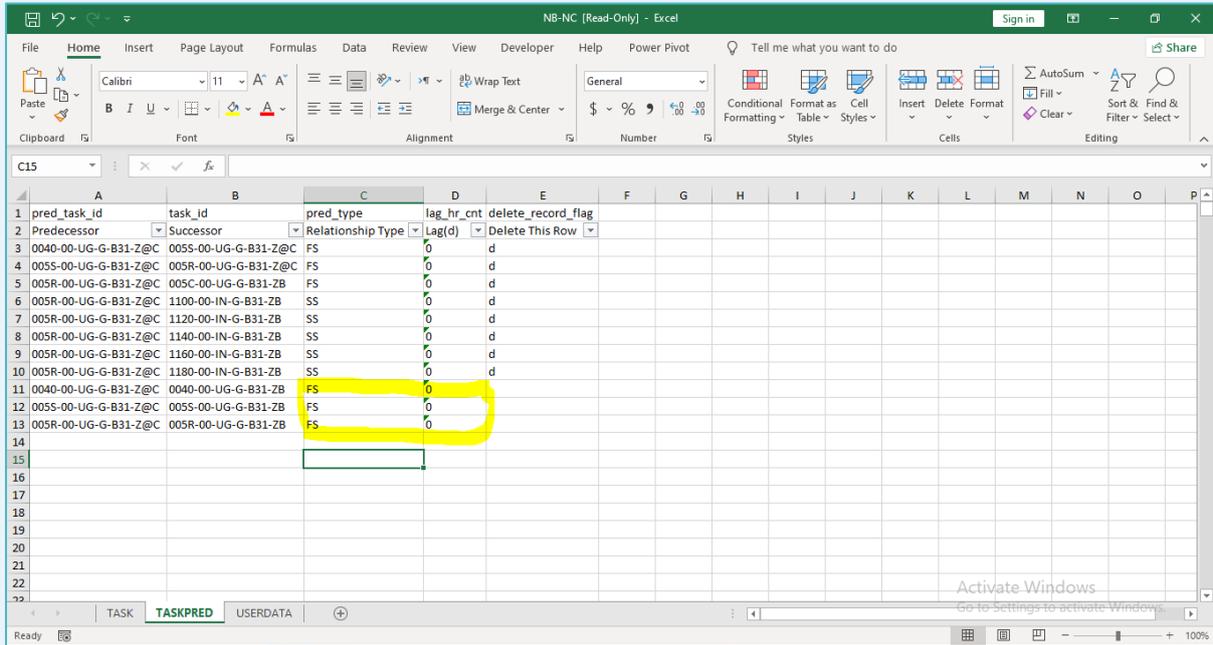


Figure 40 Fill in the relationship and lag between first and second parts

Go to Primavera P6 and import the "TASKPREP" tab only to adjust the relationships.

2.7 Resequencing the Logic

Finally, the schedule is ready for resequencing of the activities based on the site circumstances, construction methodology, expected submission of remaining drawings, and the expected delivery dates of material on site.

2.8 Revised Global Changes

After adjusting the sequence and the relevant resources, the next and final step is to set:

- Original Duration = Actual Duration + Remaining Duration (for In-Progress and Completed Activities)
- Planned Start = Actual Start (for In-Progress and Completed Activities)
- Planned Finish = Actual Finish (for Completed Activities)

Such can be achieved through applying the following global changes:

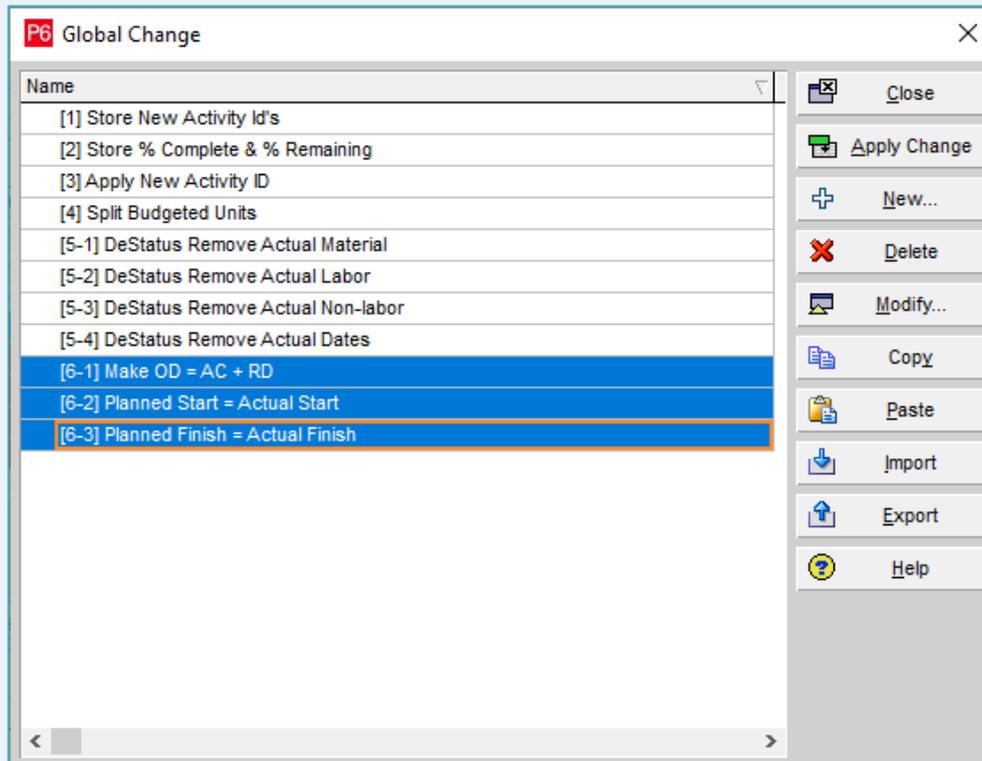


Figure 41 Global Change: [6] Revised Global Changes

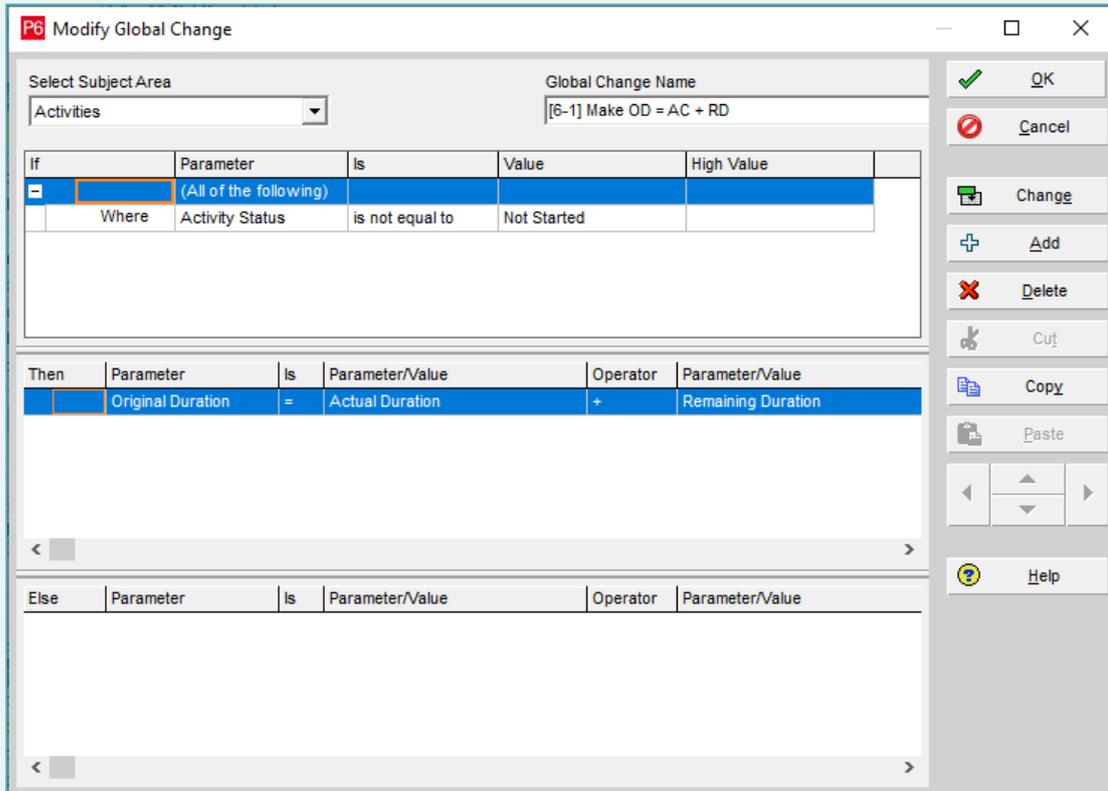


Figure 42 Global Change: [6-1] Make OD = AC + RD

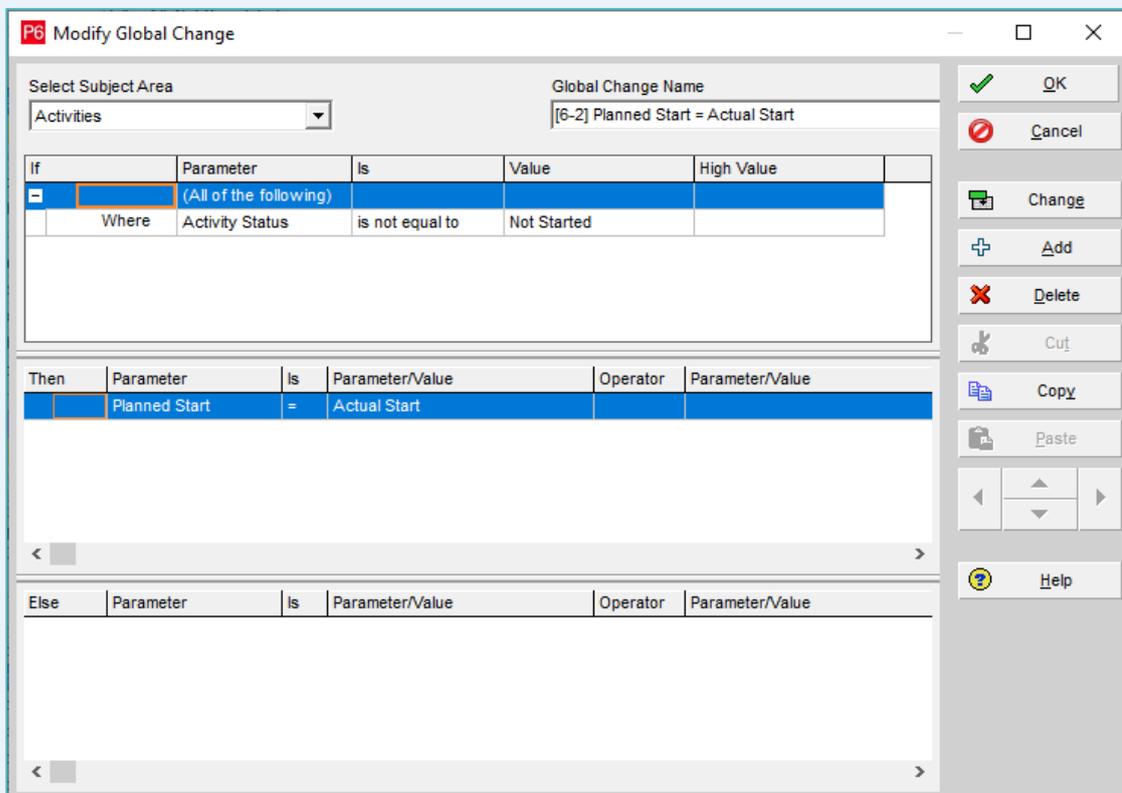


Figure 43 Global Change: [6-2] Planned Start = Actual Start

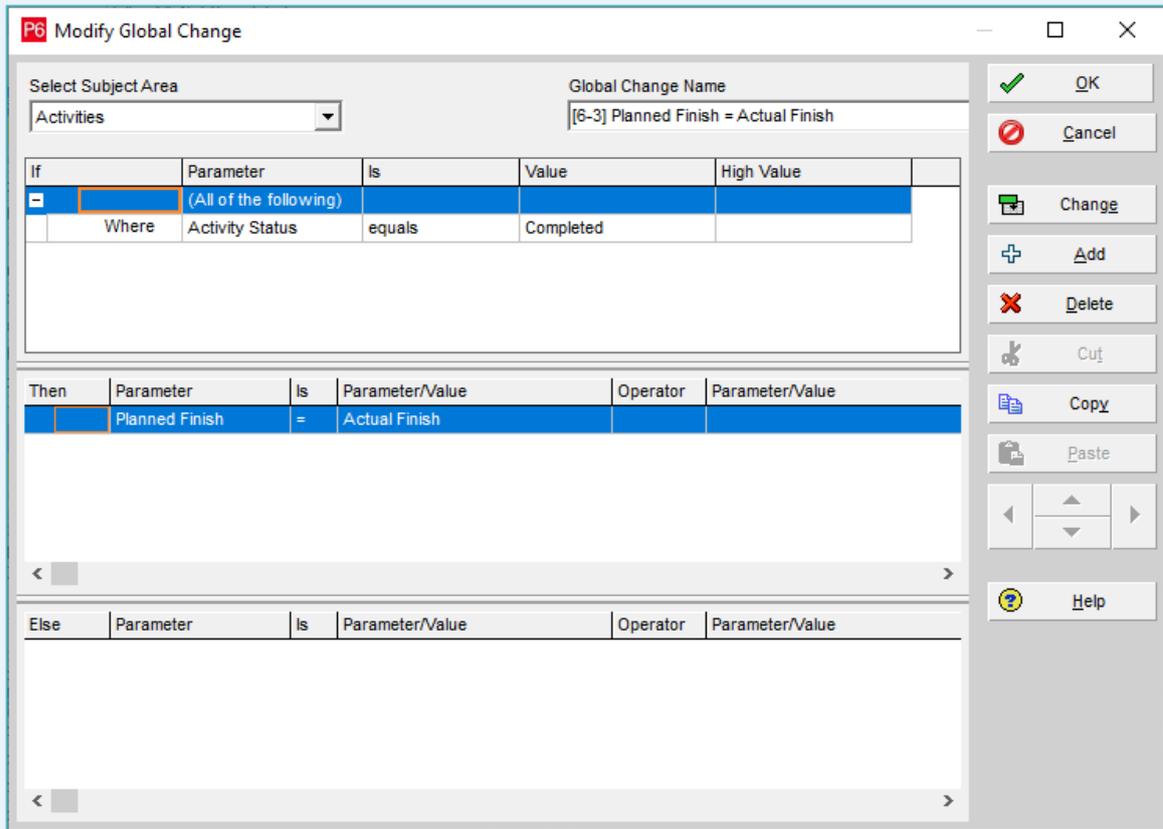


Figure 44 Global Change: [6-3] Planned Finish = Actual Finish

2.9 Revised/ Recovery Programme Checklist

The following checklist is the final step to review and validate the produced Revised/ Recovery Programme.

This checklist presents the basic measures for reviewing and validating the produced programme and can be adjusted in line with the project needs as deemed fit.

SN	Revised / Recovery Programme Checks	Status
1	The Budgeted Total Cost Matches the Revised Contract Price in the Contract Amendment	
2	The Float Paths are Logic, Realistic and in line with the Site Conditions	
3	The Remaining Units Distribution is Equal to the Planned Units Distribution	
4	The Remaining Units Distribution are Logic and Realistic	
5	The Criticality Percent is Logic	
6	No Out-of-Sequence Activities Found	
7	No Open-Ended Activities and Dangling Activities ³ Found	
8	No Invalid Relationships Found	
9	Calendars are Properly Adjusted (i.e., Proper Working Hours, Weekends, Holidays) and are Assigned to the Respective activities.	

Table 4 Revised/ Recovery Programme Checklist

³ - Open-Ended Activities are the activities without predecessor(s), successor(s), or both.

- Dangling Activities are the activities that have predecessor(s) and successor(s) but from the same side (Start or End).