

## The **HARD** and **Soft** About **Critical Paths**

Let's start with the basic definition of the **Critical Path**.

“The logic path through the schedule that represents the longest time path and, therefore, the shortest time in which the project can finish.”

To make this a rock solid truthful statement we must add “based on our developed logic.” Most schedules created today have critical path relationships that do not have to happen the way our logic diagram depicts them.

What do we mean by **Hard Logic**? Hard logic is simply a relationship that for some valid reason must cause two or more activities to be performed in exactly that sequence. On the other hand **Soft Logic** is a relationship that is a desired sequence. It may be a very valid desire based on past experience or other circumstances which dictate this as a good method.

If a critical path by definition determines when a project **can finish**, then it is not a desire (Soft) method, it is instead a must (Hard) method. This can mean only one thing about a Critical Path that contains relationships other than hard ones. It is a constructed Critical Path, not a natural one that cannot be modified.

One of the huge problems we have in CPM schedules today is a combination of activities and connecting logic that is so poorly designed that we can never have a hard logic critical path. Activity scopes are often so broad and non-specific relationships are often an approximation or logic and not even real.

We have allowed this to happen over the years, partially by inexperience or lack of proper training and partially by enforcement of well created specifications. Understand that it is upon these poorly thought-out and constructed schedules that we are prepared to go to battle over millions of dollars.

We should return to the correct scheduling methods and insist that Critical Paths, before submittal are rightly constructed of Hard Logic.



All hard logic relationships must be included and in some manner be protected against removal. Soft logic is needed to apply construction techniques and control resource flow efficiency.



These relationships must be recognized for what they are, kept to a minimum and not be used to take the place of hard logic.

Remember, in construction impacts, delays, liquidated damages assessment, weather days extensions, and lots of accompanying money depend on Contract Schedules. We cannot afford to take these schedules casually.

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