



Change Orders Block 1 - What is a Change Order?

An Online Continuing Education Course for Engineers

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CHANGE ORDERS BLOCK 1 - WHAT IS A CHANGE ORDER?

#1A WHAT IS A CHANGE ORDER?

A Change Order is the Owner's order to revise the Owner's agreement with the Contractor regarding the contract work's cost, time, materials or methods.

WHERE IS A CHANGE ORDER IN THE CONSTRUCTION PROCESS?

Construction is a process. Change orders are part of the construction process. A typical construction process is as follows. The location of a CHANGE ORDER in the construction process is indicated.

- The Owner visualizes the project and seeks funding.
- The Owner determines the type of construction process to be utilized.
- The Owner selects an Architectural team or a design-build contractor.
- The Architect creates an initial version of a design and construction schedule, with approximate costs estimates, and updates them at stages during the design process. As design progresses the Owner adjusts funding or project scope to keep the project within the cost and time budgets.
- The design team develops the Owner's visualization into Contract Documents consisting of drawings and specifications.
- The Owner bids the Contract Documents. During bidding the Architect issues additions, deletions and corrections as addenda which are part of the Contract Documents. The related costs become part of the Contractor's bid.
- The Owner selects a "successful contractor" and signs an agreement with that Contractor. The Owner's Agreement with the Contractor consists of a contractual agreement in writing signed by both the Owner and the Contractor. The agreement lists the Contract Documents (specifications sections with date issued, drawings numbers with date issued, and addenda numbers with date issued) which are part of the agreement.
- During construction, other contract documents are developed: submittals, shop drawings, field orders, field sketches, post-bid addenda, and CHANGE ORDERS.

Change Orders follow a sequence.

First ask: Is this really a change order, or is this a clarification?

If it is a change order,

What is the reason for this change order?

Who should pay for this change order?

What is this change order description?

What will be the change order cost in time and money?

Prepare and execute the change order.

OUTLINE OF A CONSTRUCTION PROCESS

Following is a general outline of a construction process to indicate the position of a change order in that process.

INITIATION PHASE

- A person envisions an objective and a facility as a tool toward that objective.
- The person shares their vision and a group of people want that objective.
- The group plans the facility's timing, personnel, and finances.
- The group (termed "the Owner") studies Architects (or Construction Managers)
- The Owner "Shortlists" two or three Architects (or Construction Managers).
- The Owner is wise to judge "value" with this question. Will the construction savings, maintenance savings and quality enhancement from this candidate's design approach more than pay for this candidate's "expensive" fee? The Owner is wise to NOT bid the lowest design fee. The Owner is wise to select for a good outcome as you would select your heart surgeon. Would you select your surgeon based on the lowest fee?

DESIGN PHASE

Schematic development:

The Architect collects the Owner's ideas and presents facility ideas to the Owner. The Owner narrows the scope of ideas.

Design development:

The Owner and Architect "firm up" the conceptual plans. The Architect assembles the design team representing applicable disciplines, including but not limited to Site, Civil, Structural, Mechanical, Electrical, Plumbing, Fire Protection, and specialty trades as the project requires.

50% Design:

The disciplines indicate their design concepts for the major items in their respective disciplines. The Owner and each discipline review, coordinate, and adjust.

95% Design:

The disciplines almost complete their designs. They again review, coordinate, and adjust.

"Value" review:

The disciplines present the Owner with ideas which they find acceptable to cut costs while retaining the "value" (appearance, maintenance efficiency, long term durability, and function) this project requires. This procedure sometimes finds realistic cost or time savings or eliminates duplication of effort. Incorrectly, "value" is considered as cost cutting at the expense of appearance, maintenance costs, long term durability, or function.

100% Review:

Code officials, Owner, Architect, and Engineers review the contract documents.

BID PHASE

- The Owner advertises for bids.
- The Owner takes bids on bid date.
- The Owner reviews the bids, selects a Contractor, and awards the Contract.

CONSTRUCTION PHASE

The Contractor

provides bonds, insurance, and other legal work.

occupies the site.

selects subcontractors and suppliers.

submits materials and methods for review by Owner, Architect, and Engineer

constructs the facility

The Architect and Engineer issue clarifications in answer to some Contractor questions.

Changes to the Contract come in the form of:

Post bid addenda

Change Orders

Field Orders

The Owner, Architect and Engineer perform site observations for general conformance

Regular site observations

Prefinal observations

Final observations

Facility commissioning (Further observations, testing and proof of performance)

Post Construction

The Contractor provides a one year warrantee. The Contractor performs repairs, replacements, and work completion.

After construction, for one or more years, the Architect and Engineer may provide engineering and recommendation assistance to selected Owners who are valued clients.

#1B WHY HAVE CHANGE ORDERS?

Realistically, valid reasons exist for change orders. The Owner is wise to allocate a percentage of the project to cover change orders.

An Owner's posture of "no change orders" is detrimental to the Owner, the Architects and Engineers and the Contractor. It is not cost effective for an Owner to pay for the work to achieve a "perfect" document. To develop perfect documents would require an exorbitant fee and design time.

In most cases it is practically impossible to acquire perfect knowledge of existing conditions. Even if documents were perfect, many reasons require changes.

#1C WHEN ARE CHANGE ORDERS MADE?

A Contractor is wise to have the Owner's written approval for a change order before proceeding with the work. Then the Contractor can be paid for the work.

General Conditions to the Contract typically state that the Owner shall approve a change order before the Contractor proceeds with the change work. In this manner the Owner maintains control of the Owner's work.

There has been the occasion that a Contractor offered to perform work because the Contractor felt a good working relationship with the Engineer, and the Contractor wanted to expedite the schedule. I thanked the Contractor for his willingness, but warned the Contractor that we have no promise whether the Owner will fund the work or not. It is also possible that the description of work will change as the Engineer, Architect and Owner discuss the proposed change order. I recommended that the Contractor request a change order and receive its approval before proceeding with that work.

#1D HOW MANY CHANGE ORDERS ARE APPROPRIATE?

The Owner's comprehension of the reasons for the changes affects the Owner's attitude toward the quantity of change orders.

For example, if the Owner knows that the Owner or a Code official asked for a change, then the Owner is typically willing to accept the change.

If work was installed, removed and reworked due to errors and omissions, and the Owner would pay twice, the Owner will probably not want to pay but once for those changes.

If the Contractor encountered existing unforeseen conditions such as rock, underground water, or damaged structure, the Owner would probably understand the need for the change order.

OWNER: "IT IS MY POSITION -
NO CHANGE ORDERS!"

ANTE BELLUM
HOME SITE &
INDIAN CAMPGROUND

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WATER
MAIN

NOT WHERE
OWN ON
PLANS

SEWER

LEAKING

STONE OUTCROPPING

ARTESIAN GROUNDWATER

W. W. Wong 9/10/02

No Change Orders !!!