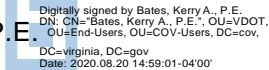


VIRGINIA DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DIVISION

INSTRUCTIONAL AND INFORMATIONAL MEMORANDUM

GENERAL SUBJECT: Contract Change Management	NUMBER: IIM-CD-2020-02-01
SPECIFIC SUBJECT: Change Orders	DATE: August 20, 2020
	SUPERSEDES: IIM-CD-2018-02.01
APPROVED: Bates, Kerry A., P.E.  Kerry. A. Bates, P.E. State Construction Engineer	

EFFECTIVE DATE

This Instructional and Informational Memorandum (IIM) is effective upon receipt.

CHANGE ORDER GUIDANCE

1. DEFINITION

A Change Order formally establishes changes to the contract. A Change Order may be used to add, modify, or delete: pay items, contract time, or other terms of the contract.

There are two types of Change Orders. A Bilateral Change Order is mutually agreed upon by VDOT and the Contractor and is used when both parties agree on the cost and time impacts associated with the changed condition. A Unilateral Change Order is issued by VDOT to make a contract change when both parties cannot agree on the time and cost impacts.

It is important to note that a Change Order shall not be used to implement a change solely for the convenience of the Contractor or a one-time costs savings for the contract. In these circumstances, the changes to quality and life-cycle impact of the product being constructed must be considered.

2. ENTITLEMENT

Entitlement must be established to validate the changed conditions from the original contract documents and shall be clearly documented on the Form C-10A. The reason for entitlement of the Change Order can be due to one or more of the following:

- Significant Changes in the Character of Work (Section 104.02b) caused by:
 - Character of work differing materially from original contract,
 - Increase or decrease of a major item (or piling) by 25% or more, or
 - Increase of a minor item by 200% or more
- Value Engineering Proposal (Section 104.02c)
- Differing Site Conditions (Section 104.03)
 - Type I
 - Type II

For design-build projects, entitlement cannot be established for increases or decreases to major or minor items because they are lump sum contracts. In addition, entitlement cannot be established for a Type I Differing Site Condition on design-build projects after the expiration of the Scope Validation Period.

3. APPROVAL OF CONCEPT

After entitlement has been established, the Contractor and the Area Construction Engineer, or his/her designee, should discuss the proposed scope of work. A conceptual level scope of work should be documented along with entitlement on VDOT Form C-10A. VDOT approval of the C-10A should be based on the estimate cost of the proposed change and/or time impact to the project in accordance with the below approval authorities. The approved C-10A should be provided to the Contractor prior to the Contractor developing their proposal. It should also be communicated to the Contractor that the approved C-10A is the Approval of Concept and request for proposal for the proposed scope of work and not approval of the Change Order. On Projects of Division Interest (PODI), FHWA approval is required.

For any additional work, the Approval of Concept shall clearly indicate whether the scope is:

- Clearly Defined
- Not Clearly Defined

The concept should be categorized into one of the following categories to better understand the need for the change:

- UTIL – delays or extra work caused by utilities
- CHAR – changes to the character of work as noted above
- ADD – additional work or scope, not originally planned
- PLAN – plan error or omission
- CONT – error or omission in contract document
- VALU – contractor value engineering proposal
- LEG – local, state or federal government proposal
- POL – VDOT policy or guidance changes that result in changes or additional work
- VDOT – delayed NTP or VDOT caused error/delay
- MISC – changes that do not fit into the above categories
- NBID – items specified into contract with set unit price, not bid on by the Contractor

- RENW – renewing/extending time limit on a renewable/on-call contract

The appropriate categories should be identified on the executed C-10 and C-10A forms.

Both the Contractor and VDOT will use the scope of work identified in the Approval of Concept to estimate all costs associated with the Change Order for concepts that have a clearly defined scope.

4. INDEPENDENT GOVERNMENT ESTIMATE FOR CONCEPTS THAT HAVE CLEARLY DEFINED SCOPE

For Change Order concepts that have a clearly defined scope, the Department must develop an independent government estimate (IGE) prior to receiving the Contractor's estimated price. The Area Construction Engineer, or his/her designee, will estimate the cost of the Change Order by clearly detailing the changed conditions from the original contract using:

- Estimated quantities and associated unit prices derived from the contract's Schedule of Items.
- Estimated quantities and associated unit prices derived from bid histories for comparable projects with comparable quantities if the required bid items are not included in the contract's schedule or items, and/or
- Itemized cost breakdowns of work packages that utilize other industry resources when the use of estimated quantities and unit prices is not feasible.

Other industry resources may include R.S. Means and the Equipment Watch Blue Book. Blue Book rates are available on the VDOT internal website; however, it should be noted that Blue Book rates are maximum rates, and as such are not well suited to establish a basis for negotiating additional work. In all cases, the appropriate adjustment factors for year and region must be applied. For areas outside of the Responsible Charge Engineer's expertise, other professionals in the relevant subject matter should be consulted to help estimate the costs. For example, design costs associated with changes on design-build projects can be estimated by a designer.

No costs associated with a compensable delay should be included in the IGE. These costs cannot be considered until a Time Impact Analysis is submitted, reviewed, accepted and the delays are determined to be solely the fault or responsibility of VDOT.

After the Area Construction Engineer, or his/her designee, has developed, signed, dated, and documented the IGE, the Contractor's estimate can be received and compared to the IGE for negotiation.

5. FORCE ACCOUNT FOR CONCEPTS THAT DO NOT HAVE CLEARLY DEFINED SCOPE

For Change Order concepts that do not have a clearly defined scope, a Force Account may be utilized to determine the cost impacts of the changed conditions from the original contract. Prior to commencing any work associated with the Force Account, the Department and the Contractor must agree upon rates for the labor, equipment, and materials to be used utilizing VDOT Form C-115 (Contract Force Account Authorization). In addition, the VDOT Form C-115 must be approved by FHWA in advance for any projects that are considered PODI.

Once Force Account work has commenced, daily records of all associated labor, equipment, and materials must be maintained by inspection staff reporting to VDOT. These records shall be compared and reconciled with the Contractor on a daily basis and recorded on VDOT Form C-116. Additional requirements for payment by Force Account are identified in Section 109.05(b) of the Road and Bridge Specifications.

After the agreed upon Force Account work is completed, the VDOT Form C-116 can be used as supporting documentation for the change order.

6. EXTENSION OF TIME

An extension of time may be considered for a concept with a scope that is clearly defined or a concept with a scope that is not clearly defined. The extension of time may consider revisions to dates that are eligible for early completion incentives, milestones, and/or the fixed completion date for the project. The requirements for considering an extension of the project's fixed completion date are identified in Section 108.04 of the Road and Bridge Specification or the associated special provision.

A request for a time extension must come from the Contractor in writing. If the Contractor requests a time extension, the proposed time extension will only be considered if the Contractor provides detailed supporting documentation, such as a Time Impact Analysis (TIA), for the Change Order. The changed condition from the original contract must be clearly demonstrated in the supporting documentation as a controlling work item that affects the critical path for obtaining early completion incentives, milestones, and/or project completion.

After the Area Construction Engineer, or his/her designee, has reviewed the supporting documentation and determined the actual delays to the critical path in writing, the time impact can be considered for a time extension. The Engineer may give consideration for an extension of time when a delay occurs due to unforeseen causes beyond the control of or without the fault or negligence of the Contractor. However, consideration will not be given to extension of time attributable to normal adverse weather conditions or conditions resulting from normal adverse weather.

The time extension cannot exceed the number of days of actual delay to the project's critical path. For PODI projects, the Area Construction Engineer will coordinate potential time extensions with the FHWA Area Engineer prior to requesting approval of the Change Order.

All costs and time impacts for a change to the contract shall be identified on the same Change Order. Calculations to determine field office overhead (FOOH) and home office overhead (HOOH) associated with compensable delays are outlined in section 109.05 (e). Costs associated with FOOH shall be established by applying the project FOOH rates established at the beginning of the project to the field office support items used during the extended contract time period due to the impact. FOOH costs shall be field verified against the actual extended FOOH costs incurred from the original project completion to the agreed upon compensable time extension. Payment for FOOH shall not be made until costs have been incurred.

7. APPROVAL AUTHORITY

The Chief Engineer has the approval authority for all increases to the contract budget. The contract budget is identified as the total amount allocated for the construction phase of the project on the Fund Distribution Sheet. Before additional funding can be added to the contract budget, the Chief Engineer (or designee) must approve the increase in writing on Form C-11. If the Chief Engineer (or designee) grants approval to increase the contract budget, it is the District Engineer's responsibility to work with the Asset Management and/or Infrastructure Investment Divisions to identify appropriate funding sources and allocate any additional funds needed to complete the construction phase of the project within the increased contract budget.

The approval authority for executing change orders varies based on the type of project, change order value, and duration of time extension associated with the change order. The maximum approval authority for individual Change Orders is as follows:

Dollar Amount Approval Thresholds (Design-Build and Design-Bid-Build Projects):

- Area Construction Engineer - \$250,000;
- District Construction Engineer - \$1,000,000 (requires Assistant State Construction Engineer concurrence on Approval of Concept); and
- District Engineers - all Change Orders exceeding \$1,000,000 (requires State Construction Engineer concurrence on Approval of Concept)

Dollar Amount Approval Thresholds (Public Private Partnership, P3 Projects):

- Area Construction Engineer - \$500,000;
- District Construction Engineer - \$2,000,000 (requires Assistant State Construction Engineer concurrence on Approval of Concept); and
- District Engineers - all Change Orders exceeding \$2,000,000 (requires State Construction Engineer concurrence on Approval of Concept)

Incentive/Disincentive Milestone or Project Completion Date Extension Approval Thresholds (All Projects):

- District Construction Engineer - 1 to 30 Days;
- District Construction Engineer - 31 to 120 Days (requires Assistant State Construction Engineer concurrence on Approval of Concept); and
- District Engineers - all Change Orders exceeding 120 Days (requires State Construction Engineer concurrence on Approval of Concept)

The Maximum Approval Authority does not apply to change orders that renew on-call or renewable contracts. FHWA must approve any Change Order on Projects of Division Interest (PODI).

For any federally funded project on the National Highway System (NHS), with an original estimated cost of \$10 million or more, the FHWA Area Engineer must be notified when the actual contract expenditures plus construction engineering costs exceed the original estimated cost by more than 25%. The original estimated cost is calculated by taking the FHWA-approved Engineer's Estimate of contract expenditures at Plans, Specifications &

Estimates (PS&E), subtracting out any contingency amounts, and then adding in the estimated construction engineering costs.

8. NEGOTIATION OF CHANGE ORDERS FOR CONCEPTS THAT HAVE CLEARLY DEFINED SCOPE

Requirements regarding payment for contract changes for concepts that have a clearly defined scope are identified in Section 109.05(a) of the Road and Bridge Specifications. The Contractor cannot be given direction to begin work associated with Change Orders for concepts that have a clearly defined scope until a Bilateral Change Order is executed or a Unilateral Change Order is issued.

Once the Contractor submits their estimated cost and time impacts for the changed condition, they must be analyzed by the Area Construction Engineer. If the Area Construction Engineer agreed to a time extension, then they must determine in writing whether or not the delay was compensable. Compensable delays are delays to the critical path that are solely the responsibility of VDOT. In order for a delay to be considered compensable, there cannot be a concurrent delay to the critical path that is not compensable. Types of compensable delays and non-compensable delays are identified in Section 109.05(e) of the Road and Bridge Specifications.

The Contractor's estimated cost impact will be compared to the IGE by the ACE, or his/her designee. It is imperative that VDOT not share IGE details or total dollar amount with the Contractor until the Contractor has submitted pricing and negotiations have begun. If the Contractor's estimated cost impact is within 110% of the IGE, then a Bilateral Change Order can be executed in the amount of the Contractor's estimated cost using standard line items, estimated quantities, and unit prices to the greatest extent practical. Unit prices should be reviewed to ensure that each unit price represents a reasonable and balanced cost.

If the Contractor's estimated cost impact is more than 110% of the IGE, then the ACE, or his/her designee, must discuss the Change Order in detail with the contractor. It is likely that the method the Contractor used to estimate the cost of the Change Order is different from the method used by VDOT. Regardless of the method used, the scope of work as agreed upon in the Approval of Concept for the Change Order should be similar.

During discussions with the Contractor regarding cost impacts that are more than 110% of the VDOT IGE, the ACE, or his/her designee, may discover that the assumptions they used to determine the amount of work required to perform the scope of work identified in the Approval of Concept were inaccurate and resulted in an insufficient IGE. In these instances, the ACE, or his/her designee, may note the inaccurate assumptions and revise the IGE accordingly. The revised IGE must be clearly signed and dated by the ACE or his/her designee.

Likewise, during the discussions with VDOT, the Contractor may discover that the assumptions they used to determine the amount of work required were inaccurate and resulted in an incorrect estimated cost impact. In these instances, the Contractor may submit a revised estimated cost impact.

If the Contractor's revised estimated cost impact is within 110% of the revised IGE, then a Bilateral Change Order can be executed in the amount of the Contractor's estimated cost.

Discussions may continue between VDOT and the Contractor until the revised estimated cost impact is within 110% of the revised IGE.

If the Contractor and VDOT cannot agree on a price for the scope of work identified in the Change Order, then VDOT can execute a Unilateral Change Order in the amount of the IGE, or direct the contractor to proceed with the work while good faith efforts to negotiate a reasonable price continue. Directing the contractor to perform work without an executed bilateral Change Order will commonly result in the Contractor submitting a Notice of Intent to File Claim (NOI).

In cases where it is cost prohibitive to perform the additional work as a change order to the contract, the ACE should determine if there are other cost-effective means to perform the work (state forces, on-call contracts, etc.).

In any case where additional work is being performed without an executed bilateral change order, actual costs incurred by the contractor (labor, equipment and material) must be tracked by VDOT personnel on a daily basis.

9. EXECUTION OF CHANGE ORDERS FOR CONCEPTS THAT HAVE CLEARLY DEFINED SCOPE

The Contractor cannot begin work associated with Change Orders for concepts that have a clearly defined scope until a Change Order is documented on VDOT Form C-10 and executed by a VDOT Representative with the appropriate approval authority to do so. On Projects of Division Interest (PODI), FHWA must approve the Change Order as well.

Among other things, the VDOT Form C-10 must clearly document:

- A description of the additional (or reduced) work
- Entitlement
- Agreed upon total price increase (or decrease) for the work being added (or deleted) by the Change Order
- Breakdown of the total price into items, quantities, units, and unit prices
- Agreed upon time extensions specifying any changes to the fixed completion date or dates that are eligible for early completion incentives

10. EXECUTION OF CHANGE ORDERS FOR FORCE ACCOUNT WORK

The Contractor may begin work associated with Change Orders for Force Account work once the C-115 has been approved. The Change Order Form C-10 will formalize information captured on the C-116 and will be executed by a VDOT Representative with the appropriate approval authority to do so. On Projects of Division Interest (PODI), FHWA must approve the Change Order as well.

Among other things, the VDOT Form C-10 must clearly document:

- A description of the additional (or reduced) work
- Entitlement
- Agreed upon total price increase for the work being added by the Change Order

- Breakdown of the total price into items, quantities, units, and unit prices supported by the C-115 and C-116
- Agreed upon time extensions specifying any changes to the fixed completion date or dates that are eligible for early completion incentives

11. DOCUMENTATION

Supporting documentation must be maintained for all Change Orders. The supporting documentation is not made available to the Contractor and is solely for the purposes of verifying that all requirements of this IIM were followed. Supporting documentation shall include copies of the following, as applicable:

- Executed C-10
- Any notes, memos, or e-mail messages on file that clearly explain the concept of the change order
- Documentation of communication with the designer of record
- Area Construction Engineer approval of the concept clearly indicating:
 - Whether the scope of work is clearly defined or not clearly defined, and
 - Whether an extension of time for the changed condition is anticipated
- FHWA approval of the concept
- The Department's IGE, including:
 - The date the IGE was performed
 - The bid history of specific projects used to justify unit prices
 - Source information for detailed estimates
 - Any revisions, including revised assumptions
- Executed C-115
- All executed C-116
- Contractor's request for extension of time
- Contractor's supporting data for the request for extension of time (such as a TIA)
- VDOT's review comments and analysis of actual delays to the critical path for the time extension request
- Dated correspondence with the Contractor clearly indicating their proposed price for the Change Order
- Any correspondence between VDOT and the contractor notifying of a changed condition, requesting equitable adjustment or providing notice of intent to file claim
- Any correspondence between VDOT and the Contractor that demonstrates a negotiation of price and establishes the final price for the Change Order

Plan changes shall follow the process set forth in the Field Change Documentation Instructional and Informational Memorandum (IIM-CD-2013-12.01).

12. GLOBAL SETTLEMENT CHANGE ORDERS

All change orders for additional work must meet the requirements of this IIM. As such, Global Settlement Change Orders that do not establish entitlement for all costs are not permitted. It is acceptable, however, to issue a single change order that resolves multiple independent change order requests or open items. In these instances, costs and entitlement of each independent item must be delineated separately and captured per this IIM.

13. SUBMITTAL FOR CONSTRUCTION DIVISION REVIEW

The Construction Division will make Project Controls staff available to provide assistance, guidance, or to review potential Change Orders in advance of their execution. All field staff are encouraged to utilize this resource as circumstances allow.

All executed Change Orders and supporting documentation must be submitted to the State Project Controls Engineer within 14 days of execution. The State Project Controls Engineer will review executed Change Orders for compliance with this IIM. Any significant concerns on individual Change Orders will be brought to the attention of the next highest approval authority. Any programmatic concerns regarding Change Orders executed by a specific District will be brought to the attention of the State Construction Engineer.