



**US Army Corps
of Engineers®**

ENGINEERING AND CONSTRUCTION BULLETIN

No. 2023-13

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SUBJECT: Construction Contract Duration and Beneficial Occupancy Date

CATEGORY: Directive and Policy

1. References:

- a. Engineer Regulation (ER) 1110-1-1300, Cost Engineering Policy and General Requirements, March 26, 1993
- b. Engineer Pamphlet (EP) 715-1-7, Architect-Engineer Contracting in USACE, February 29, 2012
- c. ER 5-1-11, USACE Business Process, July 31, 2018
- d. Resident Management System (RMS) 3.0 Government Manual, December 2021
- e. Unified Facilities Criteria (UFC) 3-740-05 Handbook: Construction Cost Estimating, April 21, 2020

2. **Purpose.** This ECB provides updated guidance on establishing beneficial occupancy dates (BOD) for construction contracts and replaces ECB 2012-21 previously issued on 23 July 2012.

3. **Applicability.** The construction contract BOD represents a risk-based assessment of probable time growth after award. As most contracts experience some amount of time growth after award, the construction contract BOD provides important schedule information to inform project stakeholder planning of follow-on activities. The guidance and tools provided within this document shall be utilized on all construction contracts delivered by USACE, to include projects where USACE is the end-user (i.e., Operations Division). These tools should be tailored to appropriately represent delivery risk for the specific project.

4. Project Milestone Definitions.

a. The Beneficial Occupancy Date (BOD) (CC850) is the date the stakeholder or non-federal sponsor can expect to receive useful occupancy of the facility or construction work for follow-on contracts or intended use. Original BOD must not be equivalent to or earlier than the Contract Required Completion Date (CC830). Within RMS, the Original BOD Date is used as the baseline to track variance from scheduled/actual BOD.

b. The original Contract Required Completion date, (CC830) is calculated using the Notice to Proceed (NTP) Acknowledged date plus the original contract duration at time of award,

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including options exercised at award. The scheduled (current) required contract completion is calculated using the NTP Acknowledged date plus the current construction duration and all time extensions associated with contract modifications, including options exercised after award.

Refer to Enclosure 1 for full definitions of the P2 and RMS milestones referenced in this document. The Project Delivery Team (PDT) shall closely adhere to the definitions for original, scheduled, and actual dates for milestone activities to provide consistent, accurate data.

5. Establishing Construction Contract Durations. It is imperative that beneficial occupancy dates are developed alongside realistic contract durations. The designer of record (DOR) shall use a qualified scheduler to prepare the proposed construction contract duration. The PDT shall consider the contract scope as reflected in the draft solicitation documents or design submittals, existing conditions, climate, construction sequencing and phasing, the construction of any temporary facilities and the sequence of construction to establish the construction duration. The PDT shall provide its recommendation on construction duration to the district cost engineer after completion of all pre-award design reviews, and prior to the Designer of Record submission of final design documents. Construction Branch signature on Biddability, Constructability, Operability, Environmental, Sustainability (BCOES) reviews convey concurrence with the proposed construction contract duration.

Enclosure 3 contains best practices and a checklist for developing realistic construction contract schedules and durations.

6. Establishing Original Beneficial Occupancy Date. Establish the Original BOD within 30 calendar days of acknowledgement of NTP (CC810). The Original BOD remains fixed for the duration of the contract. The Resident Engineer (RE) or Administrative Contracting Officer (ACO) shall establish the Original BOD using the tools provided in Enclosure 2. In circumstances where there is no RE or ACO, the Chief of Construction (or delegate) will establish Original BOD. Enclosure 2 provides a risk-based methodology to assist in establishing a reasonable Original BOD. The end-user or stakeholder “need-by” date may be considered in establishing Original BOD but it shall not relieve USACE from exercising sound professional judgement in determining probable project duration. The RE or ACO will provide the proposed Original BOD to the USACE PDT. The USACE PDT will concur on the proposed Original BOD. If concurrence cannot be reached, the Chief of Engineering and Construction is the final authority for setting Original BOD. The Project Manager will communicate the Original BOD to the stakeholder as soon after its development as practical to assist in expectation management and follow-on planning. It is important to note that the Original BOD is an internal Government date used for planning purposes only. Original BOD is not a contractual date and should not be shared with the contractor.

7. Scheduled Beneficial Occupancy Date Updates.

a. The scheduled BOD initially matches the Original BOD established by the PDT. The RE or ACO shall review the scheduled BOD monthly and revise it to reflect construction progress and known changes, as necessary. Coordinate changes with the USACE Project Manager and

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project stakeholders prior to updating RMS. Notify the USACE PM when changes to the scheduled BOD will exceed the Original BOD.

b. At project turnover, the RE or ACO shall document actual BOD in RMS. There are typically punch list items and other minor construction activities remaining at actual BOD. For military construction, actual BOD will be the date the project is officially transferred via DD Form 1354 to the stakeholder for follow-on contracts (such as IT or furniture installation) or intended use. For Civil Works projects this milestone is equivalent to substantial completion or when the facility or construction can be used for its intended purpose. The actual BOD date and actual construction completion date should be the same within RMS.

8. **Update.** New requirements will be included in the next appropriate policy document update.

9. **Point of Contact.** The point of contact for this ECB is Jacky Henderson, CECW-EC, 501-350-1890.

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Encls.

Enclosure 1 – P2 and RMS Milestone Definitions

Enclosure 2 – Risk-Based BOD Developer Narrative and Tool

Enclosure 3 – Pre-Award Project Schedule Best Practices and Checklist

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ENCLOSURE 1: Definitions

The underlined definitions apply to P2 system milestones. The definitions annotated (RMS) are derived from the milestone definitions within the RMS 3.0 information system.

Beneficial Occupancy Date (BOD), CC850 – BOD is the current date the stakeholder or non-Federal sponsor can expect to receive useful occupancy of the facility or construction work. Although all construction efforts at the facility construction site may not be completed (for example, punch-list items and other relatively minor construction activities may still be required for facility construction to be considered complete), and USACE may need to continue administering the final stages of the project construction contract until such completion, the user may begin to occupy all or agreed upon parts of the facility and use it for its intended purpose. For Civil Works, BOD is the date when a Feature of Work or Element has been completed and is beginning Monitoring & Adaptive Management, if required. The Construction Contract associated with the Feature of Work or Element has been completed (CC820), interim or final OMRR&R manual(s) have been provided to the non-Federal sponsor, and the District Engineer notifies the project sponsor in writing that the feature of work or element is complete. This milestone can be used multiple times in a single project.

Original Beneficial Occupancy Date (RMS) – This is the forecasted date, mutually established by the Project Delivery Team (PDT), which sets the initial expectation of when the facility or construction work will be transferred to the stakeholder. This date should be established within 30 calendar days after contract award and remains locked for the life of the contract.

Scheduled Beneficial Occupancy Date (RMS) – Initially this matches the original BOD established by the PDT, then is updated as necessary to reflect when BOD is currently expected or scheduled to occur.

Actual Beneficial Occupancy Date (RMS) - This is the date the stakeholder receives useful occupancy of the facility or construction work. Efforts at the construction site may not all be completed. For Civil Works, this milestone is equivalent to substantial completion (i.e. can be used for its intended purpose). For military projects, this is the date the client should sign the interim DD form, 1354, Transfer of Real Property.

Note: It is possible to have multiple BODs on a single project. For projects with separate phases, the date in RMS should reflect the last or final BOD for the contract. Local milestones can be added to track multiple BODs in RMS.

Contract Required Completion, CC830 – This is the date set in the contract for completion. Contract Required Completion date is based on the Actual NTP Acknowledged Date (CC810) plus the contract duration at time of award, including options.

Original Contract Required Completion (RMS) – This is a calculated date using the NTP Acknowledged Date plus the original (awarded) duration, including options. This date remains unchanged for the life of the contract.

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Scheduled Contract Required Completion (RMS) – This is a calculated date using the NTP Acknowledged date plus the current duration, including options and executed modifications.

Construction Contract Complete, CC820 – Final acceptance inspection of construction contract complete. The date the CO/ACO informs the contractor that liquidated damages will not be, or no longer will be, assessed. The warranty period begins on the contract. This can be with or without deficiencies. This term is synonymous with the term “Substantial Completion.”

Construction Completion Scheduled (RMS) – This is the date the USACE PDT predicts the work will be accepted as complete.

Actual Construction Completion (RMS) – The date USACE accepts the work as complete. The Contracting Officer (CO/ACO) informs the contractor that liquidated damages will not be or no longer will be assessed and the warranty period begins, if required by contract. Construction completion may occur with or without deficiencies. This is synonymous with the term “Substantial Completion.”

Contract Physical Completion, CC840 – Finish date for all physical contract work, including punch list deficiencies.

Scheduled Contract Physical Completion (RMS) – This date typically tracks Scheduled Construction Completion plus 30 calendar days. The RE or ACO shall use their professional judgement in determining this date.

Actual Contract Physical Completion (RMS) – The date all contractor work is completed including all deliverables (ex: as-builts, O&M manuals, keys, final reports, etc.). All deficiencies/punch list items are complete. Note: Claims can be pending, and this date excludes activities within government control, such as warranty inspections, CPARS evaluations, final 1354, etc.

Project Fiscally Complete (CW470) – This provides the finish date for finalizing all cost sharing allocations, returning, or receiving final sponsor cash, and closing out escrow agreements. When this milestone is actualized, project is officially closed.

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ENCLOSURE 2: Risk-Based BOD Developer Narrative

Risk Based Assessment of Estimated Time Growth to Establish the Original Beneficial Occupancy Date

Based on professional judgment and evaluation of risk factors by the RE or ACO, an Original BOD can be established using the attached BOD Developer spreadsheet. The eight risk factors considered are Contract Duration, Design Quality, User Requested Changes, Contractor Quality, Location, Differing Site Conditions, Weather, and Other Risk Factors. A review of MILCON projects completed in the past three fiscal years (FY2020, 2021 and 2022) found that a baseline of 90 calendar days was a realistic average for BOD time growth. The updated risk model allows for time growth between 57 and 269 calendar days – these days are added to the contract duration to determine Original BOD. For smaller projects, the baseline average can be adjusted downward to allow for fewer calendar days between the contract duration and Original BOD.

The BOD developer tool includes a risk range for each category. A risk evaluation factor of 1.0 means an average level of risk. Numbers less than 1.0 reflect the risk is lower than average and should be used only after careful consideration. Risk evaluation factors above 1.0 reflect a higher-than-average level of risk. The fixed range outlined in this tool may not be appropriate for every project type (ex. Mega Projects). The ranges within this tool are editable and may be adjusted if conditions require the use of different factors. The RE or ACO should document the rationale for each of the selected risk factors. Additional rationale should be provided to explain use of factors outside of the BOD Developer tool ranges.

If issues that will impact project start are known at the time of Original BOD development, the ACO/RE may use the “Day for Day Impact to Project Schedule Known at BOD Development” field to enter these days directly, instead of calculating them through the tool. This field should be utilized for rare instances where project start is impacted by known delays with permitting, utilities, user move-out, etc. When utilizing this field, ensure that this risk is not duplicated through use of an increased risk number for related factors elsewhere in the tool.

The BOD Developer tool also provides a time growth check as a function of project duration. Project data analysis has shown that for MILCON projects, actual BOD is tracking an average of 130% of original contract duration. The BOD Developer tool allows the ACO or RE to see the difference in the 30% duration and risk-based BOD numbers and use professional judgement to determine which to utilize. The calculator will automatically recommend the larger of the two BODs in calendar days from Notice to Proceed. However, the RE or ACO can choose to utilize the lower number if that better reflects their understanding of the project risk.

Once the RE or ACO has determined an appropriate Original BOD, they should sign the tool by double clicking the signature block and file as part of the project records.

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ENCLOSURE 3: Pre-Award Project Schedule Best Practices and Checklist

Proposed Schedule and Duration Development Best Practices

Forecasting project duration is an important planning step to enable successful project delivery. PDTs should consider the following best practices in conjunction with the Proposed Project Schedule Checklist to ensure the pre-award project schedule and resulting duration are realistic and comprehensive.

1. Assign Pre-Award Scheduler

Proposed project schedules shall be prepared by an appropriate District scheduling expert or an Architect-Engineer firm and reviewed by the District Cost Engineer. The scheduling expert must have experience with construction scheduling. Input from the entire PDT, and specifically the Resident Engineer (RE)/Administrative Contracting Officer (ACO), shall be leveraged to create a realistic schedule.

2. General Requirements

The proposed project schedule should be informed by previous contracts and the Cost Engineering CWE durations and vetted by construction staff with experience in field work and general construction durations. As durations are developed and vetted, ensure that the assumptions used to develop the durations are documented and conveyed to the reviewers. Assumptions include but are not limited to placement/production rates, number of crews, weather. Note that Cost Engineering products are developed using crews – if multiple crews are used concurrently, it significantly reduces the activity durations. This must be considered during schedule development.

3. Capture All Scope

The pre-award project schedule must include all required activities to accomplish the design and/or construction of a given project. Pre-construction submittals, long-lead procurement activities and closeout activities shall also be represented. Consider all unique project requirements and ensure each line item in the cost estimate is accounted for in the schedule.

4. Sequence All Activities

Ensure the schedule is a reasonable approach to the design and/or construction of the scope and accurately represents how the activities will be accomplished in the field. Activities shall be tied to each other in a logical manner.

5. Ensure Durations are Realistic

Utilize historical data, field team experience and the government estimate and crew productivity rates from TRACES software to establish realistic durations. Ensure that availability of labor and project location are considered.

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6. Consider Project and Site-Specific Conditions

Prior to finalizing the proposed schedule and duration, the scheduler and PDT should walk the site to discuss phasing, laydown and other factors affecting how a contractor may accomplish the project. Consider the weather, available work windows, concurrent work at the same site, site access, local materials, long lead procurement items and other limitations.

Proposed Project Schedule Checklist			
		Yes	N/A
General Requirements	Is the proposed project scheduler fully aware of the project and site specific requirements?		
	Has the proposed project schedule been reviewed by the PDT, specifically the Resident Office staff?		
Capture All Scope	Are all phases of the project represented (design, procurement, construction, closeout, etc.)		
	Schedule contains all activities necessary to deliver the product, including contract constraints (e.g. adequate time considered in the schedule for the approval of preconstruction submittals prior to the start of mobilization)?		
	Schedule includes all activities that the government, contractor and others must accomplish for contract completion, including government design reviews, receipt of government-furnished equipment, etc.?		
	Has hazardous material abatement been considered in the schedule?		
	Have required/historical permitting timeframes been considered in the schedule?		
	Is each cost element in the estimate represented in the schedule?		
Sequence All Activities	Schedule contains logical sequence between activities?		
	Every activity has a predecessor and successor, except for the start and finish milestones?		
	Schedule contains no start-to-finish logic relationships?		
	Schedule contains a clear critical path?		
Ensure Durations are Realistic	Are the activity durations achievable? Can stacked trades perform efficiently in the construction area?		
	Has historical resource availability been considered in the activity durations?		
	Activity durations consider "most likely" scenarios, instead of "best case"?		
	All durations utilize the same time unit: days?		
	Schedule considers long-lead procurement items?		
	<i>Have projects of similar size and complexity been delivered in this duration?</i>		
Consider Project and Site Specific Conditions	Schedule contains accurate number of weather days in accordance with the specific anticipated adverse weather data provided in the contract and appropriate seasonal work periods based on location?		
	Schedule contains site-specific limitations based on a site visit and other considerations identified by the USACE field team (access, local materials, environmental concerns, etc.)?		