



Earthwork – Rock Excavation

Revision and Approval

Revision	Date	Nature of Changes	Approved By
0	01-21-2022	Original Issue	Richard Foley

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Background

This process establishes Structure Construction (SC) responsibilities and procedures for review and authorization of submittals, quality assurance, materials, and construction for presplitting, blasting, and controlled blasting of excavation in rock.

When rock excavation is performed as part of Roadway Excavation and Structure Excavation, SC assists the Resident Engineer with the review and authorization of submittals, quality assurance, materials, and construction for the structure portion of the work.

Structure excavation performed under this process is typically accomplished using controlled blasting.

Prior to reviewing this Bridge Construction Memo (BCM), it is essential to review the [Contract Specifications](#), Section 19-4, *Earthwork – Rock Excavation*, that this BCM is based on as identified in the title block above. The information in the contract specifications typically will not be repeated in the text of this BCM.

Process Inputs

1. Contract work that requires rock excavation
2. Submittals required by the *Contract Specifications* for controlled blasting (including, but not limited to qualifications for the blaster-in-charge, blast monitoring consultant, and blasting consultant, which are part of the Contractor's Quality Control (QC) responsibilities.

Procedure

1. All work associated with this process is charged as [Project Direct-Construction](#)
2. Inspection of field work for this process is:
 - a. [Intermittent](#) for drilling holes and other preparatory pre-blast work.
 - b. [Continuous](#) for setting charges and blasting.
3. Before construction begins:
 - a. At the preconstruction conference, discuss the Contractor's proposal for controlled blasting.
 - b. Following the preconstruction conference, coordinate with the Resident Engineer to determine if planned blasting affects SC item work, and determine coverage of the blasting as follows:
 - i. If blasting involves structures work, SC Staff will review and authorize (or reject for resubmittal) the submittals for controlled blasting and perform inspection and record keeping of the blasting operations.
 - ii. If blasting involves District work, coordinate with the Resident Engineer to determine who will be responsible for work coverage as described above (SC or District) and document the agreements in the Division of Work Memo per [BCM C-5](#), *SC Division of Project Work*.
 - c. Review and authorize (or reject for resubmittal) the following required submittals before controlled blasting begins:
 - i. Blasting safety plan:
 1. Required for all proposed controlled blasting operations. One blasting safety plan may be appropriate for each controlled blast. The blasting safety plan must clearly specify if it is used for each controlled blast.
 2. Coordinate review with the District Construction Safety Coordinator (CSC).
 3. Verify qualifications of blaster-in-charge, blast monitoring consultant, and blasting consultant.
 4. Verify compliance with all applicable Construction Safety Orders as well as *Construction Manual*, [Section 4-1902B](#), *Construction Details – Earthwork – Before Work Begins – Blasting*.
 - ii. Controlled blasting plan and preblast survey:
 1. Required for each controlled blast.
 - a. An updated preblast survey is required if blasting activities are suspended for 45 days or more.

2. Coordinate review with GS Geoprofessional and District CSC. Verify that proposed blasting will not adversely affect structure foundation materials.
3. Verify compliance with all applicable Construction Safety Orders as well as *Construction Manual*, Section 4-1902B, *Blasting*.
- d. Verify that the Contractor provides written notice to the occupants of nearby buildings as required by the contract documents.
4. During construction:
 - a. Review authorized controlled blasting submittals.
 - b. Document that the Contractor provides written notice (7 days minimum) to the occupants of nearby buildings.
 - c. Conduct pre-blast meeting(s) and review blasting operations and safety protocols. The blaster-in-charge controls the jobsite during all controlled blasting operations.
 - i. Do not perform blasts within 1,200 feet of concrete placed within the previous 72 hours.
 - d. Monitor controlled blasting operations for conformance to authorized submittals. If determined for any reason that a dispute or potential claim might occur due to blasting operations, take video recording(s) of blast(s).
 - e. Notify the Resident Engineer and stakeholders and be prepared to act to secure the jobsite and surrounding areas in the event of a misfire.
 - f. If the blasting causes flyrock, suspend blasting activities and ensure the contractor submits a revised controlled blasting plan as required by the contract documents.
 - g. SC/CT to perform our own independent video of blast. The Public Information Officer will normally perform this when requested.
 - h. Document all inspection, construction, and quality assurance activities, pertinent to this BCM, in the daily reports per [BCM C-7](#), *Daily and Weekly Reports*.
 - i. After each blasting activity review the post-blast report submittal which is required within 48 hours for each controlled blast:
 - i. The post-blast report includes the vibration and noise monitoring reports, and the blasting complaint reports and the contractor's video of blast.
 - ii. Verify compliance with authorized blasting safety plan and controlled blasting plan.
 - iii. If necessary, ensure revision and resubmittal of blasting safety plan and/or controlled blasting plan to address issues identified in post-blast reports.

5. Following construction:
 - a. Review post-blasting submittals:
 - i. The post-blast survey, which is required within 15 days after completing blasting activities.
 - ii. Video submitted along with post-blast survey recordings.
6. File all controlled blasting submittals and daily reports in the appropriate category in the project records as specified in the *Construction Manual*, [Section 5-102](#), *Contract Administration – Project Records and Reports – Organization of Project Documents*.

Process Outputs

1. Authorized controlled blasting submittals
2. Documented post-blast reports (from the Contractor)
3. Daily reports

Attachments

None