



Earthwork – Structure Excavation and Backfill – Quality Assurance – Stability Test for Ground Anchor and Soil Nail Walls

Revision and Approval

Revision	Date	Nature of Changes	Approved By
0	12-31-2020	Original Issue	Richard Foley

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Background

This process establishes Structure Construction (SC) responsibilities and procedures for administration of soil stability testing performed by the contractor for ground anchor and soil nail walls.

Soil stability testing is required for excavation lift heights greater than 5 feet or an exposure duration longer than 1 work shift.

Submittals pertaining to soil stability testing are reviewed and authorized per the *Contract Specifications*, Section 19-3.01C, *Earthwork – Structure Excavation and Backfill – Submittals*.

Prior to reviewing this Bridge Construction Memo (BCM), it is essential to review the *Contract Specifications*, Section 19-3.01D(2), *Earthwork – Structure Excavation and Backfill – Quality Assurance – Stability Test for Ground Anchor and Soil Nail Walls*, 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. Authorized shop drawings

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 inspection of soil stability testing.
3. Before construction begins:
 - a. Review submittals authorized per [Contract Specifications](#), 19-3.01C, *Earthwork – Structure Excavation and Backfill – Submittals*.
 - b. Discuss soil stability testing requirements and the contingency plan with the contractor.
 - c. For example photographs and information of ground anchors and soil nail walls, review the 2019 [Winter Training](#) presentations:
 - i. Q. Ground Anchors and Soil Nails General
 - ii. R. Ground Anchors
 - iii. S. Soil Nails

These are large files and may take a while to load.
4. During construction:
 - a. Verify soil stability testing is performed per authorized submittals and contract requirements.
 - b. If soil stability test requirements are met, authorize wall excavation height and exposure time limits:
 - i. Notify the contractor in writing of test results.
 - c. If during excavation for soil stability testing the soil conditions are different than anticipated, contact the project's Geotechnical Designer and Structure Designer. The design could be impacted, either increasing or reducing the reinforcement needed or modifying the wall limits.
 - d. If the exposed excavated face does not maintain its integrity:
 - i. Direct the contractor to stabilize the excavated face as described in the authorized shop drawings.

- ii. Discuss with the contractor whether additional soil stability tests will be performed or if modifications to the authorized excavation submittals need to be made.
 - iii. Consult with the Geotechnical Designer and Structure Designer.
 - iv. Review Attachment 1, *Excavated Exposed Face Instability*, for photographs of unstable exposed faces.
 - e. Document all inspection, construction and quality assurance activities, pertinent to the BCM, in the daily reports per [BCM C-7](#), *Daily and Weekly Reports*.
5. Following an authorized stability test:
- a. Be aware that face instability may occur at any time during wall construction and thus must be monitored. Instability must be addressed per [BCM 19-3.03K](#), Earthwork – Structure Excavation and Backfill – Construction – Ground Anchor and Soil Nail Walls.
6. File all test results and Daily Reports in the appropriate category in the project records as specified in the Construction Manual [Section 5-1.02](#), *Contract Administration – Project Records and Reports – Organization of Project Documents*.

Process Outputs

- 1. Authorized Soil Stability Test results
- 2. Daily Reports

Attachments

- 1. [Attachment 1](#), *Excavated Exposed Face Instability*