



Ground Anchors and Soil Nails – General

Revision and Approval

Revision	Date	Nature of Changes	Approved By
0	11-16-2018	Original issue.	Steve Altman

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Background

This process establishes Structure Construction (SC) responsibilities and procedures for review and authorization of general submittals for ground anchor and soil nail walls.

This process also includes research investigation when required by the contract documents.

Review and authorization of shop drawings for ground anchor walls are coordinated with Structure Design per [MTD 5-14](#), *Review of Shop Drawings for Ground Anchors*.

Review and authorization of shop drawings for soil nail walls are coordinated with Structure Design per [MTD 5-18](#), [Attachment A](#), *Soil Nail Working Drawings Review Process*.

Test data submittals are required for all performance and proof-tested ground anchors, and all verification, proof, and supplemental-tested soil nails. Specific load testing procedures are in [BCM 46-2](#), *Ground Anchors*, and [BCM 46-3](#), *Soil Nails*.

Process Inputs

1. Contractor submittals:
 - a. Shop drawings for ground anchors and soil nails:
 - i. Test data
 - ii. Grout mix design
 - iii. Certified calibration charts for each jack and gauge
 - b. Shop Drawings for ground anchor and soil nail wall excavations
 - c. [Form CEM 3101](#), *Notice of Materials to be Used*

- d. Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Program (WPCP)
- e. Test samples for strand coating and encapsulation corrosion-inhibiting grease

Procedure

1. All work associated with this process is charged as [Project-Direct – Construction](#).
2. Inspection of field work for this process is:
 - a. [Benchmark](#) for review and authorization of submittals.
3. Before construction begins:
 - a. Discuss steps for submission, review, and authorization of ground anchor or soil nail shop drawings with the Contractor.
 - b. Verify the Contractor submitted shop drawings to the Structure Design (SD), Documents Unit.
 - c. Coordinate ground anchor and soil nail shop drawing review responsibilities with the Designer:
 - i. For ground anchors, review [MTD 5-14, Review of Shop Drawings for Ground Anchors](#).
 - i. For soil nails, review [MTD 5-18, Attachment A, Soil Nail Working Drawings Review Process](#).
 - d. Check status of submitted shop drawings using [Tracker Web](#).
 - e. Receive unchecked shop drawings from the Documents Unit.
 - f. Review unchecked shop drawings and provide comments to the Designer:
 - i. See [Foundation Manual, Section 11-2, Sub Horizontal Ground Anchors](#), and [Section 11-5, Soil Nails](#).
 - ii. See [Foundation Manual, Appendix K-6, Ground Anchor Wall Construction Checklist](#), and [Appendix K-7, Soil Nail Wall Construction Checklist](#).
 - g. Receive authorization or rejection of shop drawings from SD Document Unit, notify the Contractor in writing
 - h. Review [Form CEM-3101, Notice of Materials to be Used](#). Ensure all Soil Nail/ Ground Anchor materials are listed. Notify the Contractor of discrepancies.
 - f. Review Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Program (WPCP) for grout control and drilling dust containment.
 - i. When research investigation is specified, coordinate:
 - i. Research equipment installation procedures with the Division of Engineering Services (DES) Design team and the Contractor.

4. During construction:
 - a. For load testing, review test data submitted for each completed ground anchor or soil nail test as work progresses.
 - b. For revised shop drawings, see step 3 above.
 - c. Document all inspections, construction, and quality assurance activities in the Daily Reports per [BCM C-4.04](#), *Daily and Weekly Reports*.
5. Following construction:
 - a. File all submittals in the project records as specified in the [Construction Manual](#).
 - b. Record information necessary for Final Completion Records:
 - i. Any As-built changes
 - ii. Project Final Report

Process Outputs

1. Authorized shop drawings
2. Installed research equipment
3. Daily Reports
4. Project Final Records

Attachments

None