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Section 46-2.01D(2)(c) Ground Anchor Verification Test.

The verification test verifies pullout resistance of the grout/ground interface in the anchor bonded length. Existing ground anchor performance and proof tests allow the contribution of pullout resistance in the anchor unbonded length and cannot verify that the anchor bond length has the required pullout resistance.

Delineation of control zones should be provided in the geotechnical report and shown on the Plans for verification test.

Use with NSSP for sections 46-2.01B, 46-2.01C, 46-2.01D(3)(c), and 46-2.03E.

Add to section 46-2.01D(2):

###### 46-2.01D(2)(c) Verification Test

46-2.01D(2)(c)(i) General

1

Install and test 2 sacrificial verification test ground anchors for each control zone. You may install and test the ground anchors during stability test.

2

Perform verification test to verify the installation methods and pullout resistance before installing any ground anchors.

46-2.01D(2)(c)(ii) Test Procedure

3

Perform verification test in the Engineer's presence.

4

Conduct verification test as follows:

1. Incrementally load the test ground anchor as shown in the following table:

Loading Schedules

Verification test

|  |  |
| --- | --- |
| Load  increment | Hold time  (minutes) |
| AL | Until stable |
| 0.20FTL | 1–2 |
| AL | Until stable |
| 0.20FTL | 1–2 |
| 0.40FTL | 1–2 |
| AL | Until stable |
| 0.20FTL | 1–2 |
| 0.40FTL | 1–2 |
| 0.60FTL | 1–2 |
| AL | Until stable |
| 0.20FTL | 1–2 |
| 0.40FTL | 1–2 |
| 0.60FTL | 1–2 |
| 0.80FTL | 1–2 |
| AL | Until stable |
| 0.20FTL | 1–2 |
| 0.40FTL | 1–2 |
| 0.60FTL | 1–2 |
| 0.80FTL | 1–2 |
| 1.00FTLa | 10 or 60 |
| AL | Until stable |

NOTE: FTL = factored test load shown

AL = alignment load = 0.10FTL

a Maximum test load

2. Apply each load increment in less than 1 minute and hold it for the length of time shown in the table titled "Loading Schedules."

3. Measure and record the applied test load and the anchor end movement at each load increment.

4. When applying the maximum test load:

4.1. Hold the load constant for 10 minutes.

4.2. Start the observation period for the load hold when the pump starts to apply the last load increment.

4.3. Measure and record the anchor end movement at 1, 2, 3, 4, 5, 6, and 10 minutes.

5. If the movement measured from 1 to 10 minutes is greater than 0.04 inch:

5.1. Hold the load constant for an additional 50 minutes.

5.2. Measure and record the anchor end movement at 15, 20, 25, 30, 45, and 60 minutes.

5.3. Plot a creep curve as a function of the logarithm of time, showing the anchor end movement from 6 to 60 minutes.

6. Reduce the load to the ending alignment load and record the residual movement.

Verification test ground anchors that fail to comply with the acceptance criteria are rejected.

Submit revised shop drawings for additional verification test ground anchors.

Install and test additional verification test ground anchors until they comply with acceptance criteria.