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Ground improvement verification checklist: CPT, SPT, plate

Ground improvement verification checklist for CPT, SPT and plate load tests. Interactive checklist, commentable, and lets you export as PDF/Excel for sign-off.

Project:	
Date:	
Filled by:	

Pre-Test Administration	
1	Confirm verification plan aligns with approved project specifications and authority requirements; list target qc, N60, and modulus values; record approval reference.
2	Check calibration certificates for CPT cones, pore-pressure sensors, SPT hammers, load cells, and dial gauges; certificates valid ≤ 6 months; photograph certificates.
3	Survey and stake test locations; capture coordinates (±0.5 m) and elevations (±10 mm); upload CSV and annotated plan showing lot boundaries.
4	Verify minimum waiting/curing period after improvement per project specifications; record completion dates and earliest test dates; obtain supervisor sign-off.
5	Establish access and safety controls: exclusion zones, stable platforms, lighting, and dewatering if needed; log toolbox talk and PPE compliance photos.

CPT Testing	
6	Select cone (10 cm² or per plan) and saturate filter; zero sensors; record baseline; capture photo of setup and serial numbers.
7	Advance cone at 20 mm/s ± 5 mm/s; log qc, fs, and u2 every 10 mm; flag data gaps > 0.2 m.
8	Reach target depth (treated layer plus ≥ 1.0 m); document refusal criteria and actual termination depth; store depth vs resistance plot.
9	Perform repeat test at one location per lot; qc repeatability within ±10% over 1 m windows; investigate and recalibrate if exceeded.
10	Compare qc profile to target envelope per plan; mark segments pass/fail; attach annotated log and acceptance notes.

SPT Testing	
11	Verify hammer mass 63.5 kg and 760 mm drop; document energy ratio from recent field check; note borehole diameter and rod length.
12	Drive split spoon after seating; record blows for three 150 mm intervals; compute N (last 300 mm); photograph blow count sheet.
13	Correct N to N60 for energy, overburden, borehole, and rod length; compare N60 to target values; attach calculations.
14	Backfill boreholes with suitable grout to surface; record volumes and batch details; dispose of cuttings per environmental plan.

Plate Load Testing	
15	Select plate diameter per plan (typically 300–600 mm); verify load cell and gauges zero; photograph instrumentation and seating condition.
16	Prepare level test surface; apply seating stress 10–20 kPa; confirm settlement reset ≤ 0.5 mm before first increment.
17	Apply load increments to target stress; hold until settlement rate ≤ 0.1 mm/min or specified hold time; record settlement vs time both sides.
18	Calculate modulus and settlement at target stress; verify meets or exceeds project targets with no shear break; attach plots.

Data Review and Acceptance	
19	Compile raw data, calibration files, survey coordinates, and photos; cross-check IDs to plan; note any missing or suspect data.
20	Populate lot matrix: CPT qc vs targets, SPT N60 vs targets, PLT modulus/settlement; annotate pass/fail and rationale for each test.
21	Issue lot acceptance if all tests meet targets; obtain digital signatures from contractor QA and client representative; attach QR-authenticated record.

Remediation Planning	
22	Raise nonconformance for failed lots; describe deficiency (qc, N60, modulus shortfall); propose remedial method and re-test plan per approved specifications.
23	Implement hold points during remediation; re-test using same grid and methods; accept only when targets are met and evidence uploaded.

Comments:

Filled by:

Signature:

Introduction	How to use this checklist
Ground improvement verification checklist helps field engineers and QA managers confirm that treated ground meets performance targets. This verification testing framework focuses on post-treatment validation using CPT, SPT, and plate load tests to demonstrate that deliverables align with approved project specifications and authority requirements. It excludes design and method selection, emphasizing practical acceptance testing, data integrity, and lot-based decisions. You will verify test equipment calibration, apply consistent procedures, and document results with traceable location data. By comparing measured qc, N60, and load–settlement responses against target envelopes, you can accept compliant areas or initiate remediation plans for underperforming lots. The checklist reduces risk of differential settlement, premature pavement distress, and bearing capacity underperformance by standardizing acceptance workflows and evidence capture. Use this interactive checklist to tick completion, add comments for nonconformances, and export as PDF/Excel with a QR-secured record.	1. Preparation: Gather the approved verification plan, calibration certificates, survey equipment, CPT rig, SPT tools, plate load kit, PPE, and ensure access, safety controls, and curing periods are satisfied. 2. Start Interactive Checklist: Open on a tablet, select lot ID, enable tick mode, and preload test locations from the survey CSV for traceable data capture. 3. Capture Evidence: Attach photos, instrument serials, data logs, and coordinates to each item; add comments for anomalies, refusals, or deviations with proposed corrective actions. 4. Review Against Targets: Use the acceptance matrix to compare qc, N60, and load–settlement to target envelopes; mark pass/fail per test and per lot. 5. Sign-Off: Apply digital signatures from contractor QA and client representative; generate a QR-authenticated link for the accepted lot records. 6. Export and Archive: Export the completed, commentable checklist as PDF/Excel; distribute to stakeholders and archive with project document control.