

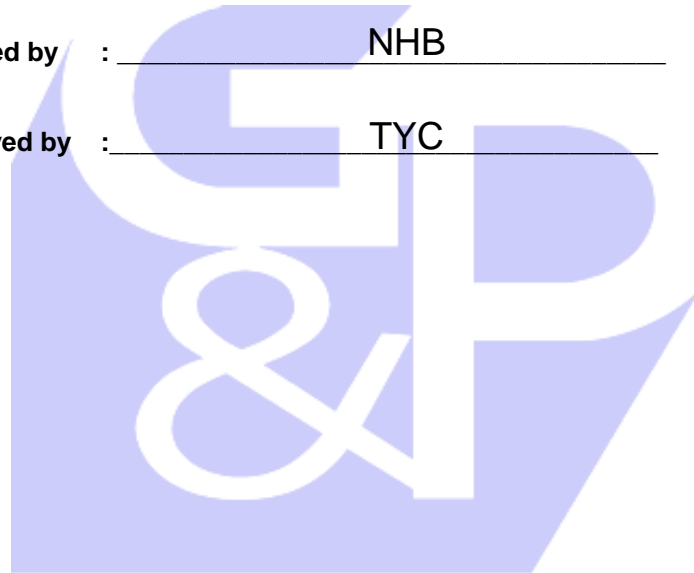


WORK INSTRUCTIONS FOR ENGINEERS

Compiled by : _____ KCM _____

Checked by : _____ NHB _____

Approved by : _____ TYC _____



**OP-3-59. CHECKLIST FOR SUPERVISION OF
STONE COLUMN CONSTRUCTION**

Checklist for Supervision of Stone Column Construction

| | CHECKLIST ITEMS | Checked By Engineer | Remarks |
|------------|--|--|---------|
| | Project No. : _____ Project : _____ Contractor : _____ Date : _____ Supervised by : _____ | Tick (√) if done, or else mark cross (X) if not available at site. | |
| 1.0 | LAYOUT | | |
| 1.1 | The Contractor shall submit full details of the stone column layout including equipment, installation sequence and method statement for stone column installation. | <input type="checkbox"/> | |
| 1.2 | Diameter = _____ m (normally 0.8m to 1.2m) | <input type="checkbox"/> | |
| 1.3 | Length = _____ m (as per design length) | <input type="checkbox"/> | |
| 1.4 | Orientation = rectangular / triangular / hexagonal | <input type="checkbox"/> | |
| 1.5 | Spacing = _____ m c/c | <input type="checkbox"/> | |
| 1.6 | Stone size = _____ mm dia (normally 15mm to 35mm for dry method installation; 35mm to 75mm for wet method installation) | <input type="checkbox"/> | |
| 1.7 | Method of installation = wet / dry | <input type="checkbox"/> | |
| 2.0 | QUANTITIES OF STONE | | |
| 2.1 | Volume of stone required = _____ m ³ /column | <input type="checkbox"/> | |
| 2.2 | Percentage of wastage = _____ % (if any) | <input type="checkbox"/> | |
| 2.3 | Carry out calibration on the FE loader bucket volume. Volume of bucket = _____ m ³ | <input type="checkbox"/> | |
| 2.4 | Nos. of bucket required = _____ nos./column | <input type="checkbox"/> | |
| 3.0 | SITE PREPARATION | | |
| 3.1 | Remove all vegetation, superficial debris or other unsuitable material (any organic matter) | <input type="checkbox"/> | |
| 3.2 | Construct a platform using cohesionless materials to support construction machinery and to serve as drainage layer. | <input type="checkbox"/> | |
| 3.3 | Carry out piloting on the platform to check the thickness of blanket in order to fit the abovementioned purposes. Thickness = _____ m (normally required 1.0 m) | <input type="checkbox"/> | |
| 3.4 | Construct side drains to collect water discharged from borehole and channel it to silt trap before draining out of the site. (applicable for wet method only) | <input type="checkbox"/> | |
| 4.0 | PRE-INSTALLATION | | |
| 4.1 | Set out all the column points with labelled peg. | <input type="checkbox"/> | |
| 4.2 | The computerized device is recording the depth of column being installed and the energy (Ampere) or pressure (bar/psi) used continuously. | <input type="checkbox"/> | |
| 4.3 | Carry out calibration on the computed depth vs actual depth. | <input type="checkbox"/> | |
| 4.4 | The bucket must have filter for dry method. | <input type="checkbox"/> | |
| 5.0 | INSTALLATION | | |
| 5.1 | Installation sequence follows zig zag pattern and the base | | |

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| | machine is located at the untreated zone. | <input type="checkbox"/> | |
| 5.2 | Ensure verticality of the vibrator by visual inspection for wet method. | <input type="checkbox"/> | |
| 5.3 | Make sure a hole of 500mm – 600 mm dia is formed and the stone is compacted in 300mm steps. | <input type="checkbox"/> | |
| 5.4 | Ensure the required energy/pressure is achieved before start formation of column. (as per termination criteria proposed by specialist) | <input type="checkbox"/> | |
| 5.5 | Make sure the stone columns are cut off neatly above the platform fill. Any unsuitable material observed shall be removed. | <input type="checkbox"/> | |
| 6.0 | POST-INSTALLATION | | |
| 6.1 | Make sure that the stone columns are properly installed to the designated depth and locations. The as-built location of column should not deviate more than 100mm. | <input type="checkbox"/> | |
| 6.2 | After all stone columns have been installed, carry out piloting again to make sure the cohesionless platform is as per design thickness. (normally 1.0m) | <input type="checkbox"/> | |
| 7.0 | RECORDS | | |
| 7.1 | The stone column installation record shall include the location (point/no), length, time start and finish, plot of depth vs time and depth vs energy/pressure. | <input type="checkbox"/> | |
| 7.2 | Client and engineer representative to sign on field sheet record. | <input type="checkbox"/> | |
| Signature by Engineers or Site Representatives :- | | G&P | Contractor Supervisor |
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