CEMENT BASED COMPACTION GROUTING

Metal Culvert Overview Flowchart
Structural Defects Flowchart (Metal)
Bedding Deficiencies Flowchart (Metal)
Hydraulic Capacity Flowchart (Metal)

1. DESCRIPTION

Cement based compaction grouting is a method of soil stabilization where a low flow, cement based grout is injected into the soil to form a grout bulb. The grout does not permeate soil pores but displaces the soil while compacting it in the process. The method is used on settled roadways (Figure 1) and for remediation of sinkholes. A small diameter (2 in. to 4 in.) steel casing is advanced through the zone to be improved, and a stiff mortar-like grout is injected at high pressure.

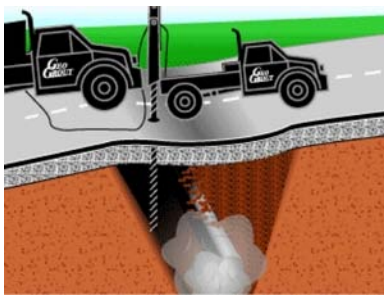

Figure 1. Compaction grouting used for soil stabilization in the trench
(http://www.geogrout.com/soil.shtml)

In 1996/97, Caltrans used compaction grouting to stabilize the soils surrounding storm drains in Los Angeles, CA where major sinkholes occurred due to infiltration of soil into the storm drain through insufficiently sealed pipe joints. Storm-drains were reinforced concrete (RCP) and corrugated metal (CMP) pipes, total length 14,460 ft, and ranging in diameter from 24 in. to 54 in. The project involved approximately 6,500 cubic yards compaction grouting (Caltrans, 2003).

2. REFERENCES

Caltrans, 2003. *Caltrans Supplement to FHWA Culvert Repair Practices Manual*, Design Information Bulletin (DIB) No. 83-01, June 2003, 136p.

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