Lateral Drain Method

The Lateral Drain Method aims to improve ground consolidation by exerting negative pressure at the ends of plastic board drains buried in ultra-soft ground to forcibly drain abundant moisture on the ground. The drain is buried horizontally in multiple stages using a special drain laying pontoon.

Features

- An increased amount of soil can be accommodated as the volume of dredged material decreases.
- Reduce the tensile strengths of net and sheet in the earth covering work when used in the surface of ultra-soft ground compared with the conventional method.
- Reduce the moisture content of dredged material to a lower level than the liquid limit and becoming easier to handle during transporting by dump truck.

Working Procedure

Preparation Work

- Installation of winch and reactive heavy-duty machine
- Setting and installation of pontoon for drain laying
- Fitting of pontoon with winch

Burrying Work

- Loading of drain materials onto pontoon
- Fitting of suction hose
- Driving of mandrel
- Burrying of drain
- Cutting and capping of drain
- Drawing of mandrel
- Demolization of machine and pontoon
- Drain laying completed

Drainage Work

- Fitting of header pipe
- Loading of negative pressure
- Drainage
- Work completed

Equipment to be Used

- Forced drainage
- Lateral drain material
- Ultra-soft ground
- Secondary receiving
- Consolidation settlement
- Improved ground
- Increase of earth amount to be received
- Drainage vessel
- Movable winch (dual)
- Nylon rope guide
- Guid for winch
- Inner movement
- Guide for winch

Completed Projects Record

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<tr>
<th>Project Name</th>
<th>Duration</th>
<th>Project Site</th>
<th>Client</th>
<th>Objective</th>
<th>Soil to Be Handled</th>
<th>Improvement Area / Thickness of Layer</th>
<th>Particulars of Drain Material</th>
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<tr>
<td>Tokuyama Soda K.K. Soil Improvement Work</td>
<td>89.12~89.7</td>
<td>Yamaguchi</td>
<td>Tokuyama Soda K.K.</td>
<td>To increase shear strength (bearing capacity)</td>
<td>Soda Ash</td>
<td>40,000m²/4.5m</td>
<td>Sectional configuration: 100 m (6x 6 mm) (1) Arrangement: Pitch 1.8 m x 3 stages / Maximum length of laying: 200 m</td>
</tr>
<tr>
<td>Magaribuchi Dam Sediment Dredge Work</td>
<td>90.3~90.7</td>
<td>Fukuoka</td>
<td>Fukuoka City</td>
<td>To increase shear strength (handling)</td>
<td>Organic Clay</td>
<td>25,000m²/2.8m</td>
<td>Sectional configuration: 150 m (6x 6 mm) (1) Arrangement: Pitch 0.7 m x 4 stages / Maximum length of laying: 125 m</td>
</tr>
<tr>
<td>Ashida River Bed Excavation Work</td>
<td>92.12~94.7</td>
<td>Hiroshima</td>
<td>Hiroshima Prefecture</td>
<td>To increase shear strength</td>
<td>Organic Clay</td>
<td>7,000m²/4.0m</td>
<td>Sectional configuration: 100 m (6x 6 mm) (1) Arrangement: Pitch 1.5 m x 3, 4, 5 stages / Maximum length of laying: 50 m</td>
</tr>
<tr>
<td>Itsukashii Area Waterfront Land Preparation</td>
<td>95.10~96.10</td>
<td>Hiroshina</td>
<td>Hiroshima Prefecture</td>
<td>Reduction of capacity</td>
<td>Marina Clay</td>
<td>196,000m²/2.4~4.8m</td>
<td>Sectional configuration: 100 m (10x 10 mm) (1) Arrangement: Pitch 1.2 m x 4 stages / Maximum length of laying: 250 m</td>
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