

PHOTO REPORT

Job:

Wee Guan Construction Pte Ltd was looking ways to lay 4 ways of Ø160mm HDPE Pipes across drain culvert of 14m for PowerGrid Ltd. On the request from Wee Guan Construction Pte Ltd, we were told to use trenchless method to lay this pipe as the traffic flow along the road is very busy and it will be very costly to remove the drain culvert. It was not practical and economical to have a HDD machine to lay 4 ways Ø160mm HDPE Pipe sleeve of 14m length. After much consideration, we decided to use two different equipment to put the HDPE pipe across.

The use of a steerable mini bore rig to drill across the drain culvert to carry out the pilot bore for allowing the Grundoburst 800G (Pipe Bursting System) to upsize to ø400mmmm HDPE pipe. This method only required closing one lane of the traffic.

Once drill rod arrives at the other end of the culvert, we will pull in the Quicklock Rods by using a backreamer. Once the rods installed, we will then carry out this upsizing operation in one pass. Using the GRUNDOBURST 800G, we will fit the roller blade, cone and the Ø420mm expander and we would then carry out the pulling, splitting open the bore hole and expanding it to Ø420mm with the Ø400mm HDPE pipe sleeve directly behind the expander. All 4 ways Ø160mm HDPE Pipe are locked inside the Ø400mm HDPE Pipe sleeve. Once the roller blade and the expander has reached the pull-in pit, the operator disassembles and all pipes have been successfully crossed without any difficulties.

Client:

POWERGRID LTD

Main Contractor:

WEE GUAN CONSTRUCTION PTE LTD

Project Location:

Tiong Bahru & Commonwealth Ave, Singapore

New pipe:

ø400mm HDPE pipe

Equipment:

- 1) GRUNDOPIT 40/60 MINI STEERABLE BORING MACHINE
- 2) GRUNDOBURST 800G with Quicklock rod system,

Total bore distance:

14 m

Depth of cover:

Start Pit	-	approx. 4m(L) x 3m(W) x 4.5m(H)
Receive Pit	-	approx. 4m(L) x 3m(W) x 4.5m(H)

Ground Condition:

Marine clay



The objective of this job was to pull a Ø400mm HDPE pipe across the above drain culvert using trenchless method. Total length across the highway was about 14 meters.



The entry/equipment pit was about 3 meters on width, 4 meters in length and 5 meters in depth. The reason to go so deep was to avoid the monsoon drain that was directly in front of the pit.



GRUNDOBURST 800g

GRUNDOPIT 40/60

The main equipment: GRUNDOPIT 40/60 for the pilot bore and GRUNDOBURST 800g for up-sizing.



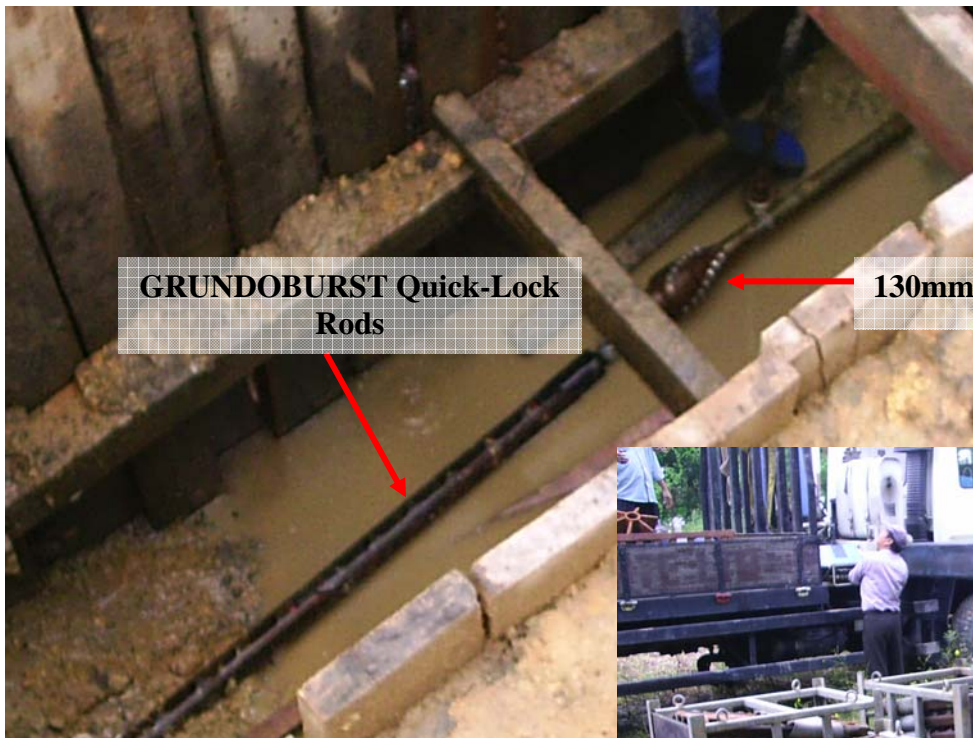
GRUNDOPIT 40/60 with all its accessories



Setting up of the GRUNDOPIT for the pilot drill across the highway.



The drill head arriving on target at the exit pit. Total time taken was about 30mins.



**GRUNDOBURST Quick-Lock
Rods**

130mm Back-reamer

The drill head was exchange for a 130mm back-reamer followed by the Quick-Lock Rods for GRUNDOBURST.



**GRUNDOBURST Quick-Lock
Rods**



GRUNDOBURST in place to use 80 ton pull back force to pull back the pipe ready on the other side through the Quick Lock Rods.



Pipe ready to be pulled/installed.



Job completed. Pipe arriving at the entry pit.