High Capacity Micro Pile

Pile with high bearing capacity even with small diameter



Hazard

Earthquake Land Slide

Solution Purpose

Prevention & Mitigation Preparedness Recovery

Solution Theme

Disaster Prevention Plan Infrastructure Technology Building Technology

Technology Subject

Mitigation Plan Road Essential Utilities Urban Facility for Disaster Prevention Emergency Base & Back-up Facility Design & Construction of Resilient Building

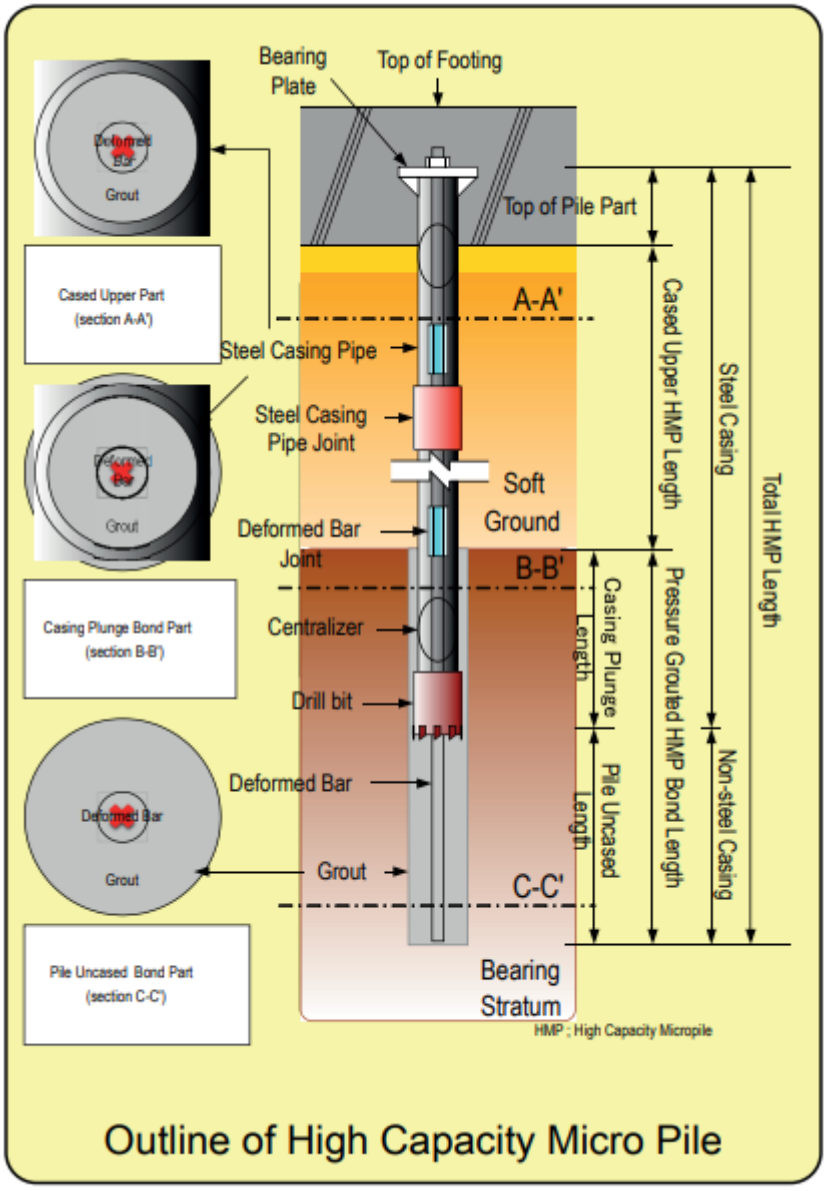
Advantages

High capacity micro piles (HMP) combine the drilling technology used by the ground anchor method and the pressurizing injection technology of grouting.

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HMP uses high strength steel pipes in addition to deformed bars as reinforcement, which ensures a high bearing capacity.
They can be used in narrow spaces and where overhead clearance is limited.

Solution Illustrated



Outline of High Capacity Micro Pile

Background

This method is applied to reinforcement of bridge piers, abutments, water distribution basins, steel tower foundations, etc., new foundations for pedestrian bridges and retaining walls, and detaining piles for slope stability.
It is used in bridge disaster restoration and road improvement projects.

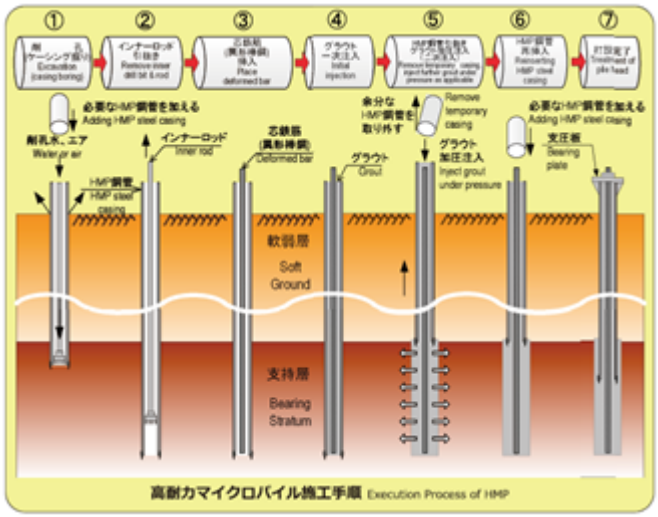
Exposition of the Solution

<Design>
●High bearing capacity can be obtained despite the small diameter.
●Effective resistance to push-in and pull-out

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●Footing dimensions can be reduced.
●Effective resistance to horizontal forces by utilizing a slanting shaft.

<Build>
●Low noise and vibration.
●Little impact on underground structures and existing structures.
●Possible to construct with a low head (approx. 3.5 m).
●Capable of drilling in sand and gravel, boulder ground, and rock walls.
●Low excavated soil volume.



Achievements of Examples

●Reinforcement of Sashiumi Bridge on National Route 9, Shimane Pref. (2001)
●Construction of Terabatatani daini tunnel on National Route 10, Miyazaki Pref. (2002)
● Earthquake-resistant reinforcement of the foundation of Kameido water supply reservoir, Tokyo (2005)

Corporate Profile

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