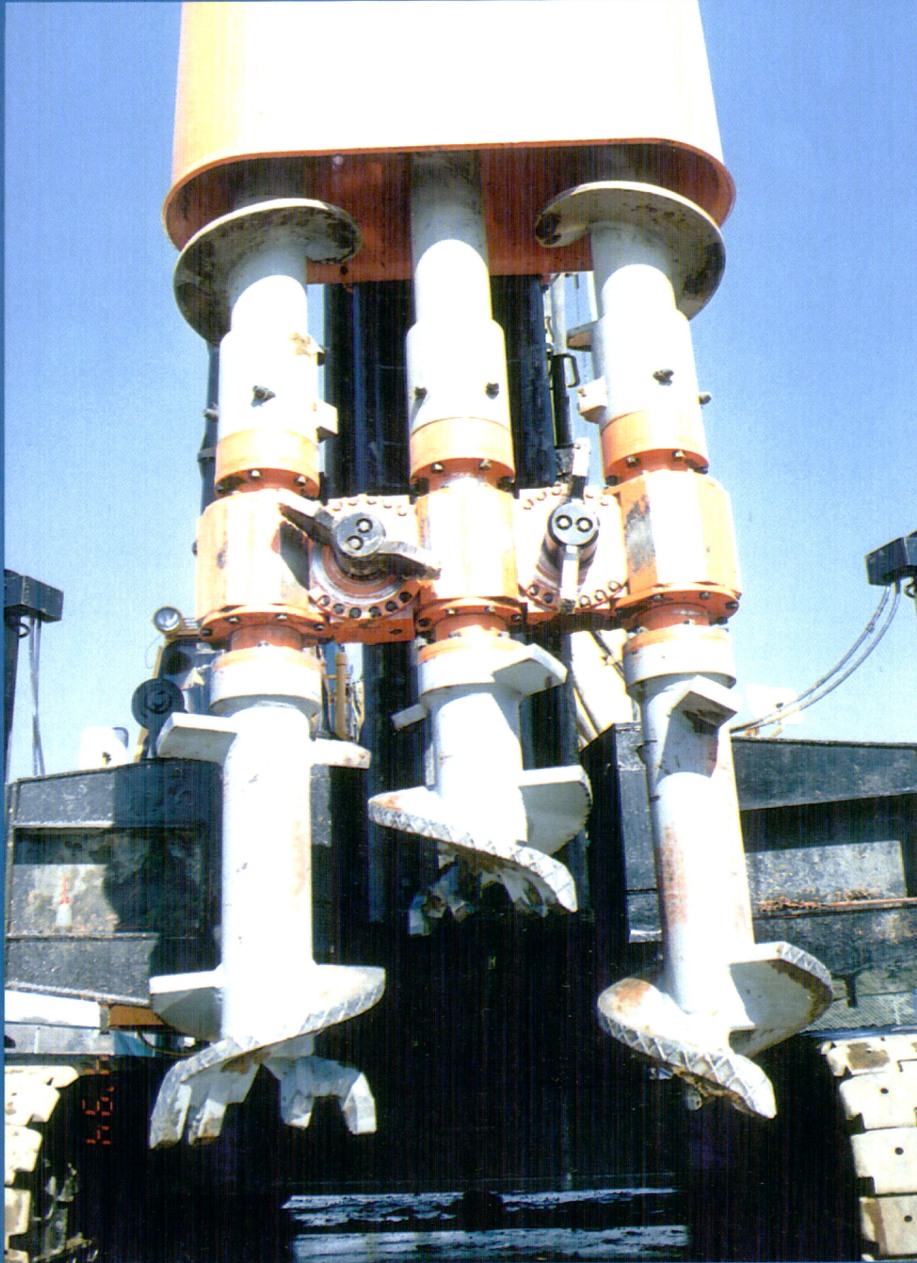


Advanced soil mixing diaphragm walling technology
actualizing flat finish side faces with uniform wall thickness

TONE TMW SYSTEM



TOA-TONE BORING CO., LTD.

Soil Mixing Diaphragm Walling Technology with Flat Surface TMW System

TONE “ TMW System ” is a new soil mixing diaphragm walling system which enables to increase soil mixing productivity and mixing efficiency in forming walls with flat surface.

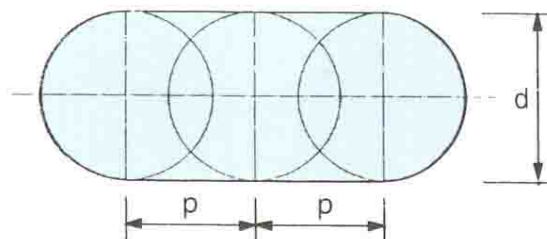
Features of TMW System

1. Side faces of the soil mixed wall can be finished flat with uniform thickness.
2. Longer interval of bit shafts increases productivity of wall forming.
3. Increased mixing efficiency enables to form homogeneous walls.
4. For earth retaining walls, since the wall thickness is uniform, the pitch of structural member installation as H-beams can be optionally set.
5. Since formed walls are homogeneous and with uniform thickness, their strength and impermeability are greater.
6. Since bits are arranged to counterbalance torque reaction, high drilling accuracy is available.
7. Automatic rod changer enables to connect and disconnect drilling stems promptly.
8. Deeper operation is possible because, with drilling stem connecting system, it is no longer restricted by the length of leader post.
9. Low head operation is possible either by the low head type leader or by TONE's standard base machine set to a low head derrick.



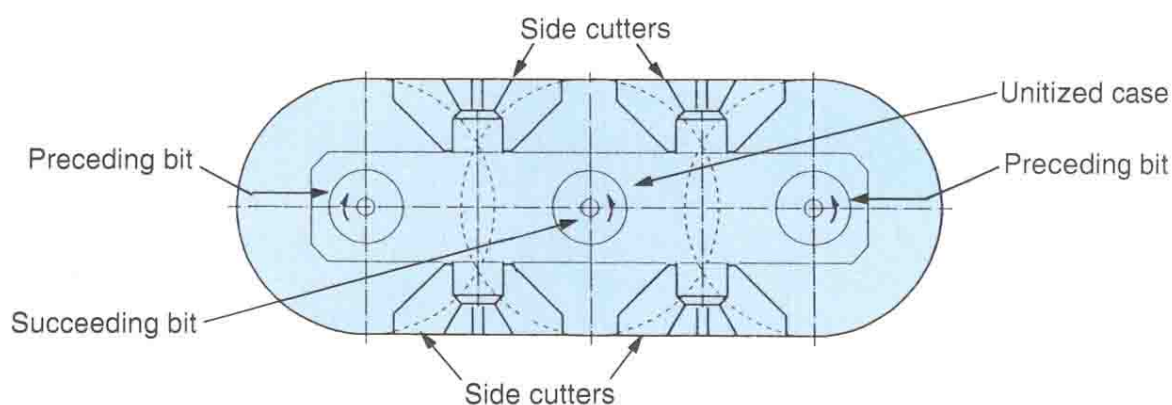
Drilling and Agitating Specifications

Model	Nominal diam. d (mm)	Interval of Bit shaft p (mm)
TMW-410	450	410
TMW-520	550 600 650	520 520 520



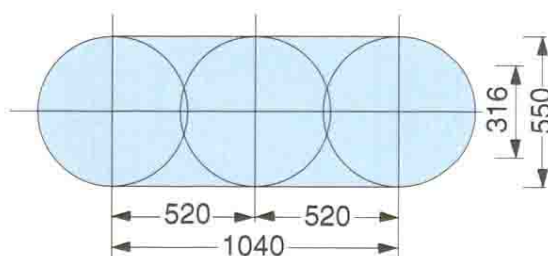
Drilling section

Structural scheme of TMW Drill



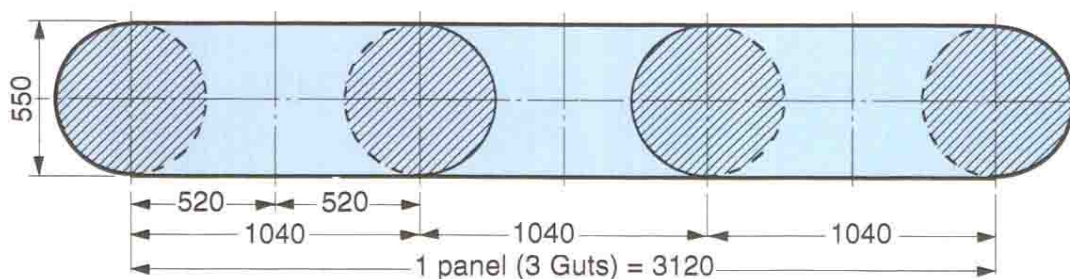
Drilling and Agitating Section of TMW-520 Drill

[single gut]

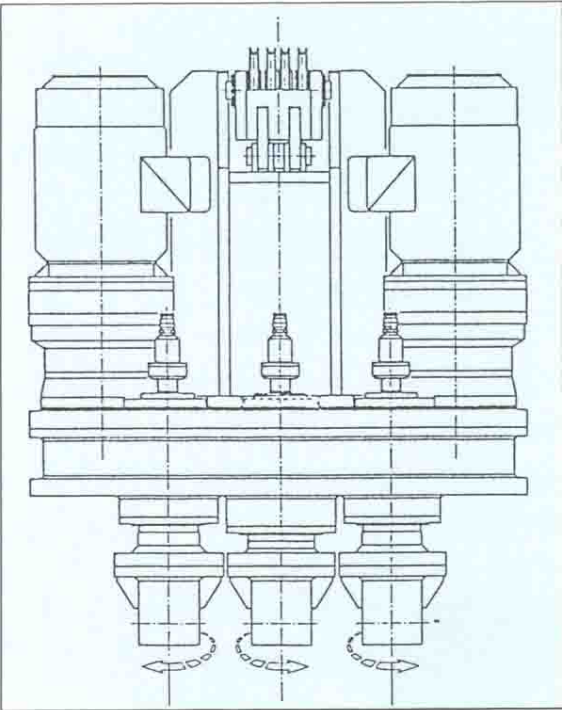


in case of d=550 mm
unit: mm

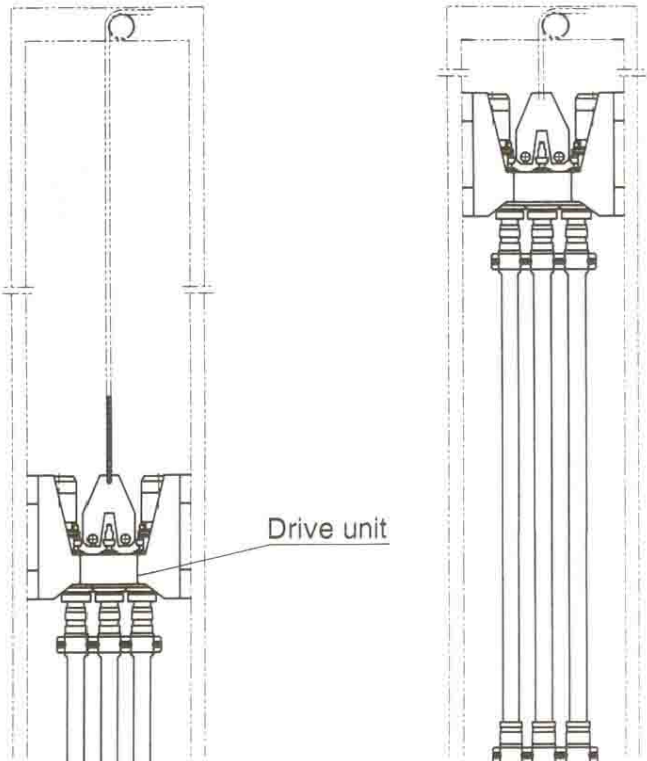
[Unit panel section to be treated by 3 guts]



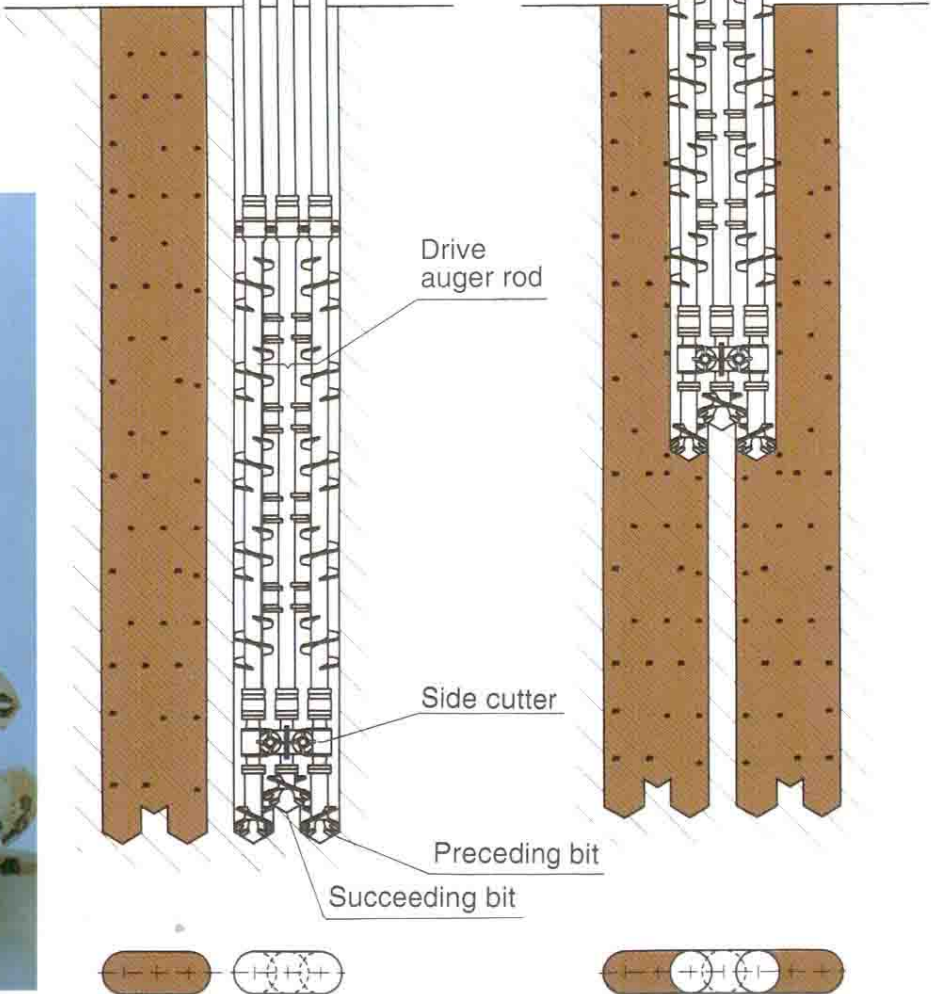
Conceptional Diagram of TMW System Operation



Power swivel



Drive unit



Drive auger rod

Side cutter

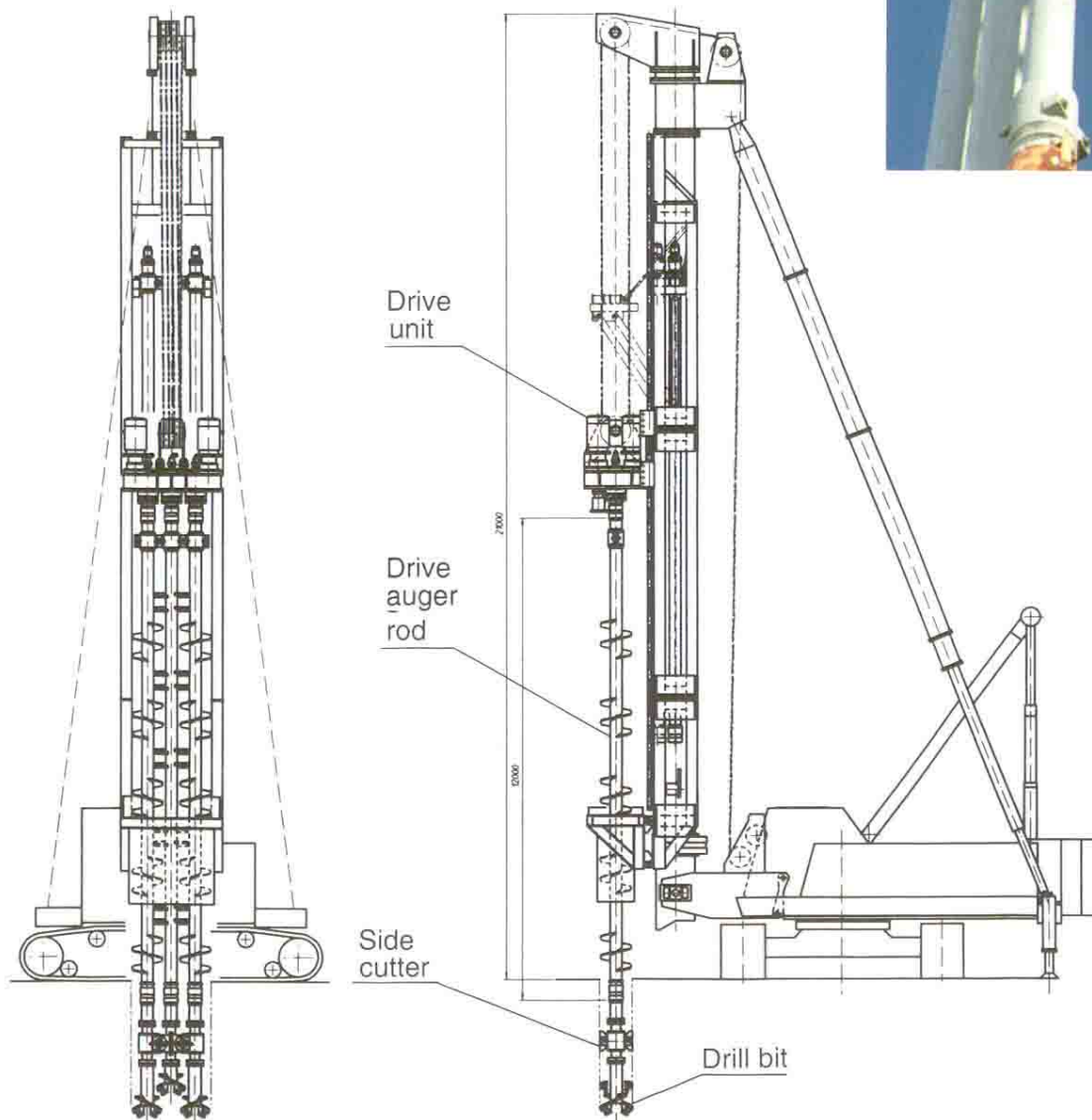
Preceding bit

Succeeding bit



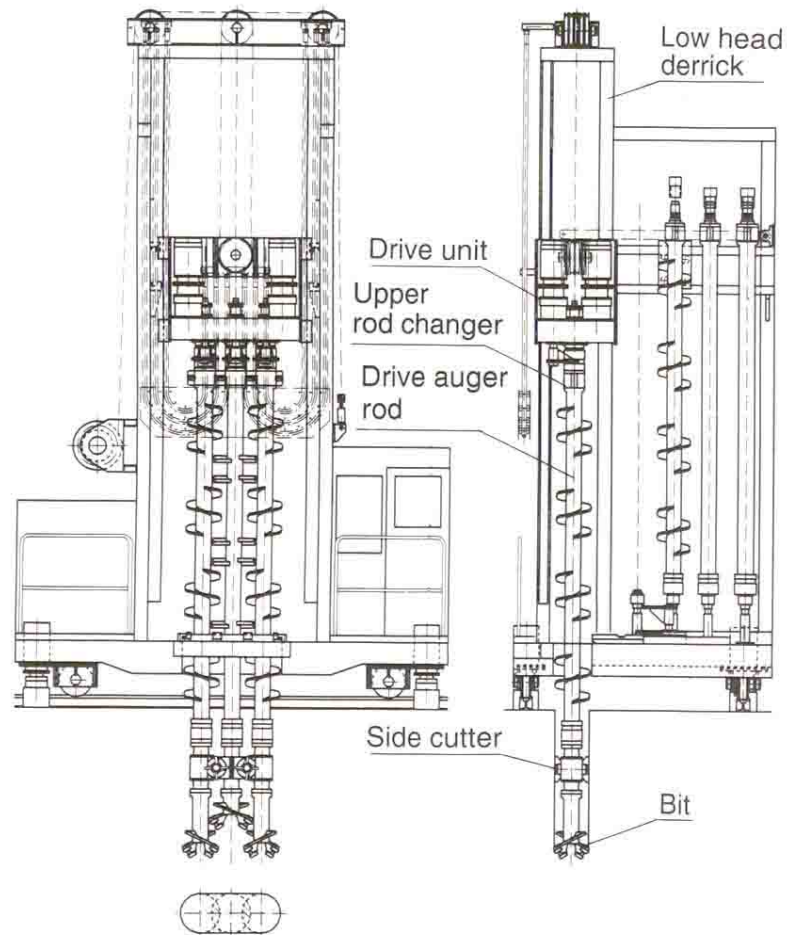
TMW Drill mounted on General crawler crane

Can be installed to general leader set on crawler crane converting from pile driver, etc.



TONE Standard Base machine set to low head derrick

Being installed to the low head derrick equipped with automatic rod changer and rod rack, operations can be carried out safely in confined working zone.



Automatic rod changer



Disconnecting operation

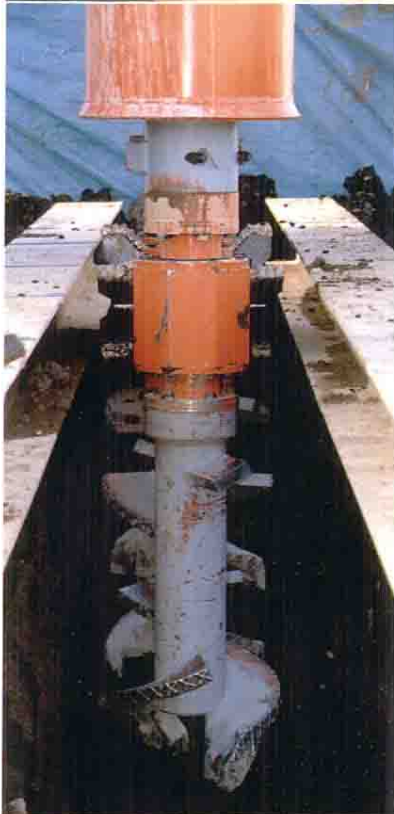


Connecting operation

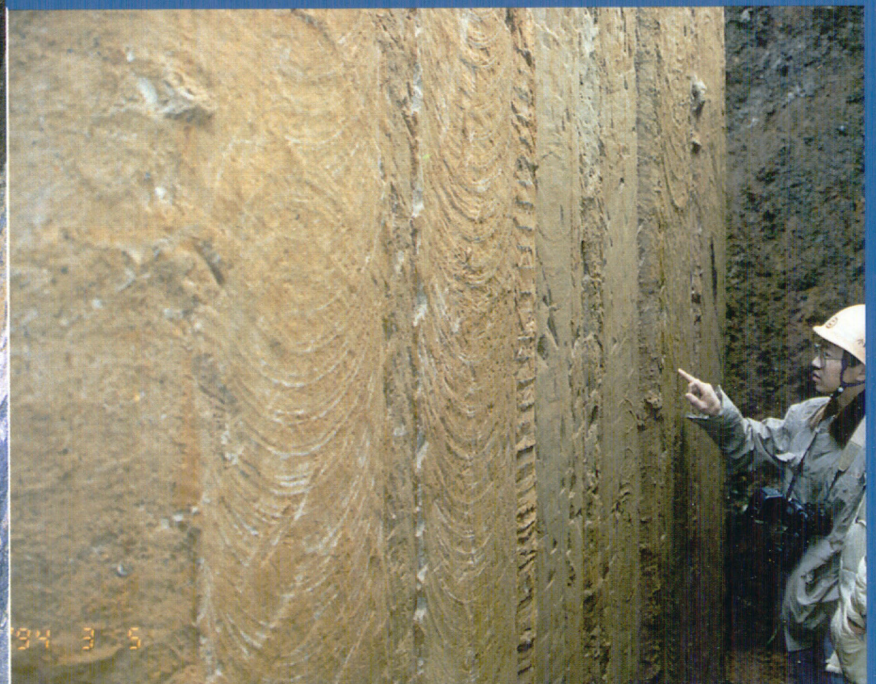
Illustrated soil mixing operation



Upper left : TMW Drill head
 Upper right : State of driving operation
 (drive unit and drill stem)
 Middle left : Guide trench
 Center : Cement milk being ejected
 from the bits of both ends.
 Lower right : Exposed soil mix wall for
 visual inspection
 Lower left : Dug out soil mix wall body



Operative trench section for ground treatment and completed soil mix wall



Amendment & Termination

In accordance with our policy of constant improvement of the products, we reserve the right to amend design, materials, specifications and prices at any time without notice.

Further in the interest of product improvement, we reserve the right to terminate certain designs in favour of more advanced models.

TOA-TONE BORING CO., LTD.

HEAD OFFICE : 3-7 Roppongi 7-chome, Minato-ku, Tokyo 106-8552, Japan

PHONE : 03-5775-3939

FAX : 03-5775-3967

<http://www.toa-tone.jp>