Construction for the Junction of the Large Shield Tunnels by the Advanced Tunnel Enlargement Method
- Ohashi Ramp Tunnel Works for the Shinagawa Line of the Central Circular Route -

Summary
To construct the junction of the main and ramp tunnels in deep underground for the Tokyo Metropolitan Expressway, the new method has been developed and achieved practical use that was to connect the two shield tunnels with segmental linings of arch shape without excavation from the surface. By using this method, the deep junction was built economically and efficiently.

The advantages of this method are no negative effect on surrounding environment, lightweight structural members, high waterproofness and durability, shortening work periods by pre-fabrication, cost reduction and so on. This method is the epoch-making technology for developing civil engineering business that also can be applied to the construction of deep and large underground space.