[Document Name] Claims

[Claim 1]

A construction method of an underground structure, comprising the steps of:

installing precast concrete boxes each having a cutting edge based on a steel-made hood attached to a front end of the concrete box, at both sides of a traversing site, respectively, such that towing directions of the precast concrete boxes are opposed to each other;

attaching a towing jack to a rear portion of one of the precast concrete boxes, attaching a fixing member to a rear portion of the other, and penetrating a prestressed concrete (PC) wire as a towing member through the traversing portion in a manner to fix ends of the PC wire to the towing jack and the fixing member, respectively;

and using the towing jack to mutually tow the precast concrete boxes in a box-by-box manner utilizing the cooperating one of the precast concrete boxes as a reactive resistance body,

prior to towing of the concrete box, pipe roof is constructed in an upper portion,

a pipe roof stopper is installed in one end of the pipe roof, the PC wire being pressed by the pipe roof stopper,

frame is installed in the tag end of concrete box so that even overhang on this concrete box,

the above-mentioned frame is connected mutually by the towing member inserted in the above-mentioned pipe roof, the front side of concrete box is excavated, using the towing jack attached both to the frame of the precast concrete box and to the PC wire, the precast concrete box is towed toward the other precast concrete box in the underground structure building ground.

[Claim 2]

A construction method of an underground structure, comprising the steps of:

installing a reactive body at a side of an arrival vertical shaft, and installing a precast concrete box having a rear portion provided with a towing jack at a side of a starting vertical shaft;

penetrating a prestressed concrete (PC) wire as a towing member through a traversing portion, and fixing ends of the PC wire to the towing jack and a fixing member provided on the reactive body;

and using the towing jack to tow the precast concrete box from the side of the starting vertical shaft toward the side of the arrival vertical shaft by the PC wire, by using the reactive body as an anchor,

prior to towing of the concrete box, pipe roof is constructed in an upper portion,

a pipe roof stopper is installed in one end of the pipe roof, the PC wire being pressed by the pipe roof stopper,

frame is installed in the tag end of concrete box so that even overhang on this concrete box,

the above-mentioned frame is connected installing a reactive body at a side of an arrival vertical shaft by the towing member inserted in the above-mentioned pipe roof, the front side of concrete box is excavated, using the towing jack attached both to the frame of the precast concrete box and to the PC wire, the precast concrete box is towed toward the reactive body in the underground structure building ground.