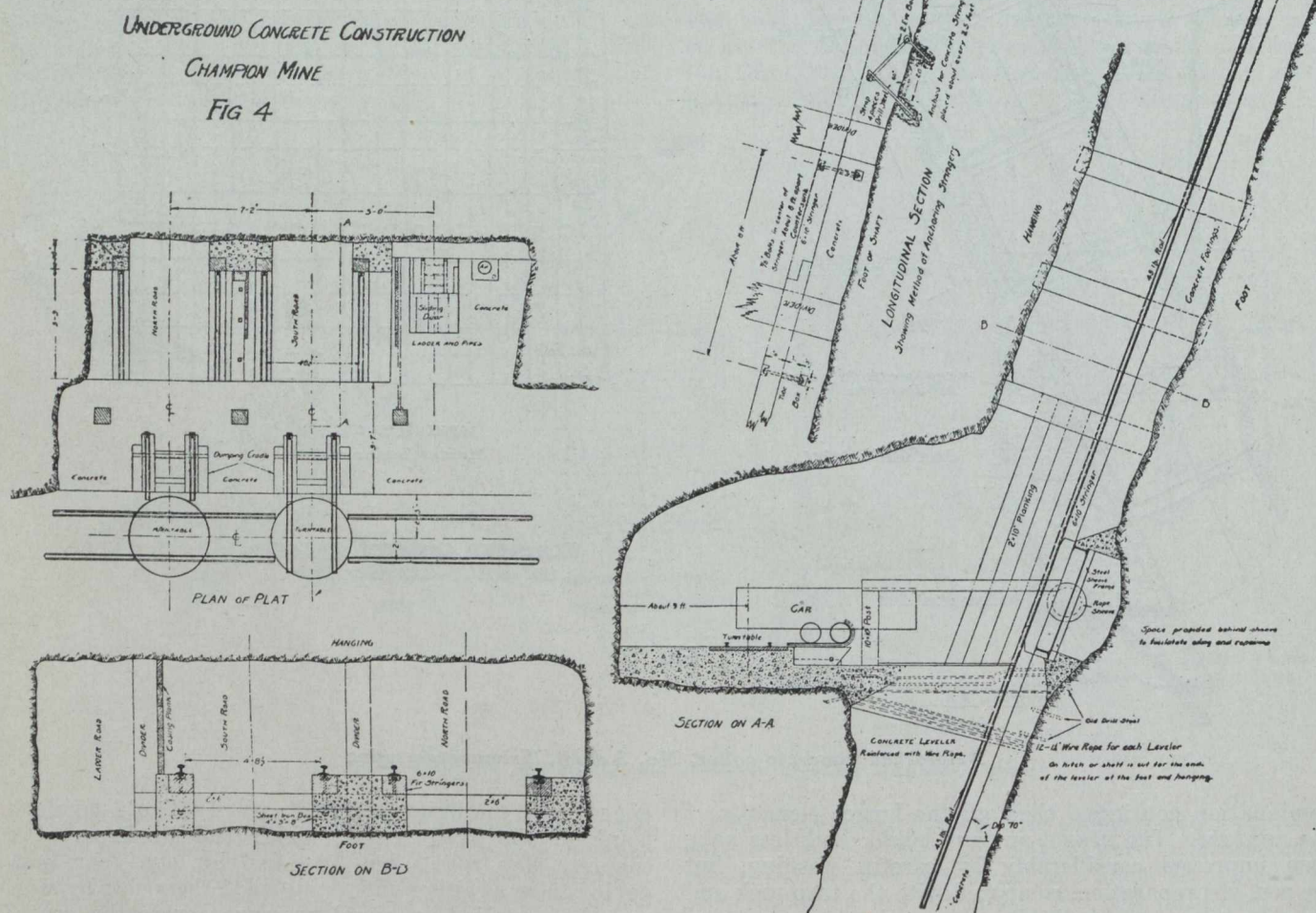


amount of water used in the mix was such that, when the batch was piled, it settled rapidly without agitation. A dryer mix was attempted by way of experiment, but due to the amount of reinforcement employed, it was found impossible to ram the dryer mix into place.

"The labor involved in making consisted of two carpenters, setting up forms and keeping them in repair; one man wheeling forms onto skidways ready for filling, returning used forms to shop and cleaning the same; one man feeding mixer from stock piles of rock, sand and cement; one man delivering mix to forms and shovelling material into place; and one mason ramming charge into final position. With this combination of men as many as four complete sets, consisting of 64

fectly true. Sets should not have been used under 60 days after removing forms, although we, through the reduction of the stock piles, have been forced to install pieces of 14 days set, but the greatest care was observed in handling and putting in place underground. Concrete sets one year old, which have been subjected to all manner of weather, can be abused somewhat and handled almost as carelessly as timber.

"As before stated, the above mentioned sets were made for the Nos. 3 and 4 shafts of the Ahmeek Mining Company. The shafts are of the three compartment variety—two skipways and one manway, dipping at an angle of 80 degrees. The outside dimensions of the compartments are:



Sections and plan showing underground concrete construction, Champion mine

separate pieces, have been moulded in one day of nine hours. In ordinary weather, the sides of the forms were allowed to remain in position over night, and then removed, while the bottoms were left in place another 24 hours. The bottoms were removed by turning the pieces on their sides, where they were left to harden one day longer before removal to the stock pile. All through the process of removal the sets were handled with the greatest care in order to preserve the appearance of the set and prevent cracking, which might not develop to the eye until weathered. All skidways used in making and storing were brought to a level to prevent warping and bending while the sets were green, to insure a perfect fit underground, for, unlike timber, the concrete set cannot be brought to place unless per-

"Skipways—7 feet 6 inches high, 6 feet 10 inches high.

"Manway—7 feet 6 inches high, 3 feet 0 inches wide, with the end plates and dividings, making the greatest span of 7 feet 6 inches. Offsets were moulded in all plates 5 inches from the inside face to accommodate lining slabs. Also, holes were cored for the use of hanging bolts and bracket bolts. The wall plates, end plates and studdles have a cross-section of 80 square inches, dividings 81 square inches. The percentages of reinforcement are approximately as follows:

Wall and end plates	5 per cent.
Dividings	5 per cent.
Studdles	3 per cent.