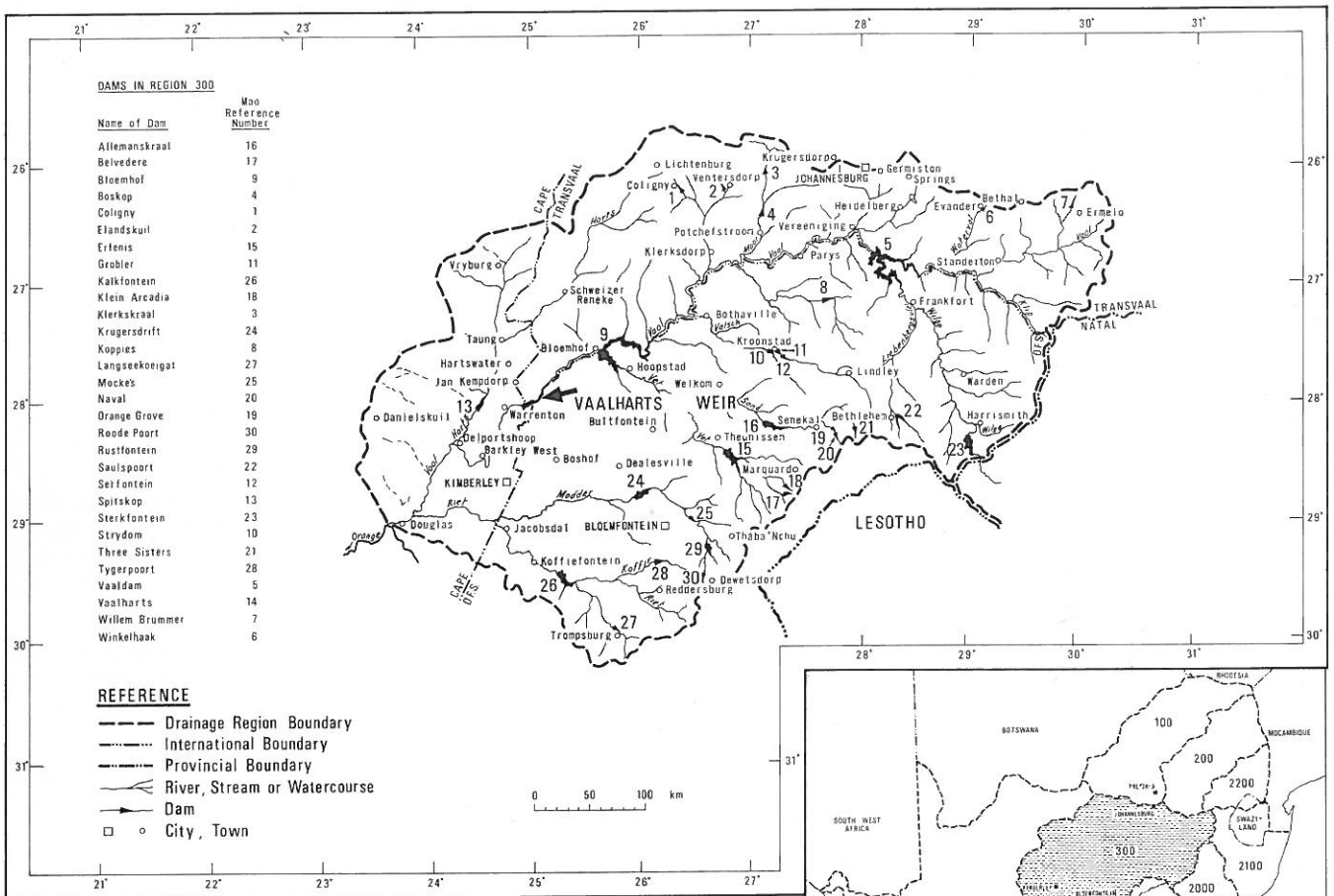


VAALHARTS WEIR



DRAINAGE REGION 300

VAALHARTS

DATA

Year of completion.....	1938, raised 1,2 m in 1967
River.....	Vaal
Nearest town.....	Christiana
Province.....	Cape
Type.....	Concrete weir
Height above lowest foundation.....	11 m
Length of crest.....	765 m
Volume content of dam.....	48 000 m ³
Gross capacity of reservoir.....	69 156 000 m ³
Purpose.....	Irrigation and water supply
Maximum discharge capacity of spillway.....	14 200 m ³ /s
Type of spillway.....	Controlled
Owner.....	Department of Water Affairs
Engineering by.....	Department of Water Affairs
Construction by.....	Department of Water Affairs

DESCRIPTION

Vaalharts Weir

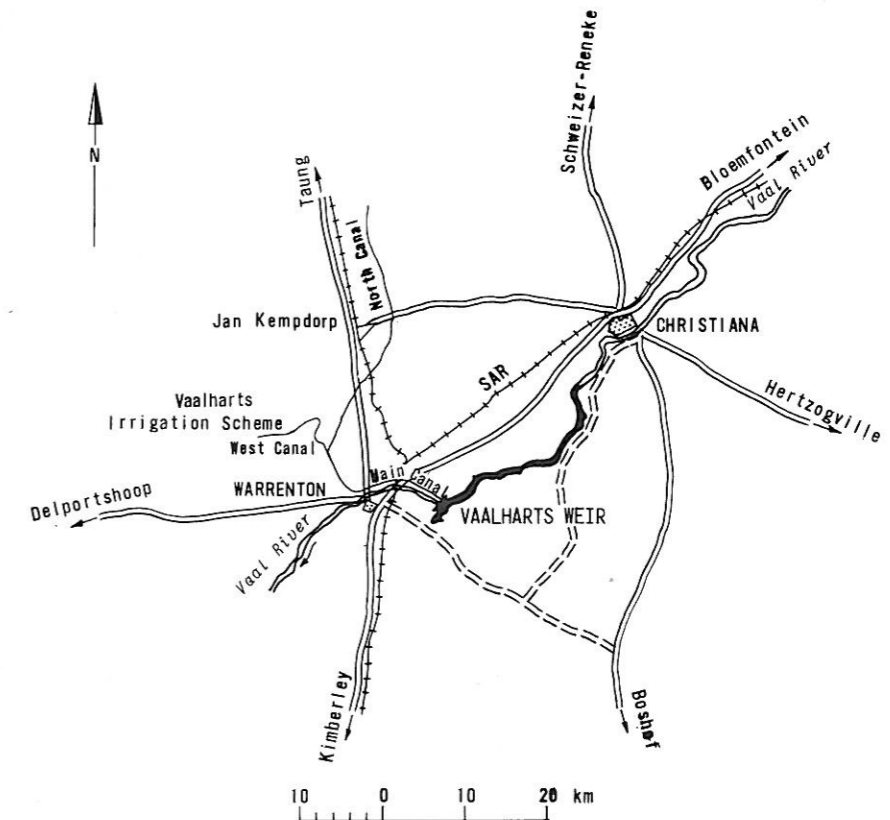
The Vaalharts weir is situated on the Vaal river 13 km downstream of Christiana and receives water mainly from Bloemhof dam 97 km upstream. The main purpose of the weir is to divert water to the Vaalharts and Klipdam-Barkly Government Water Schemes. Water is also supplied for domestic and industrial use in the towns Vryburg, Hartswater, Jan Kempdorp, Warrenton, Windsorton, Klipdam, Barkly West and Delportshoop. These towns lie within the irrigation area except Vryburg which is 52 km to the north of the scheme.

Vaalharts weir, originally constructed in 1938, is an Ambursen type structure designed to pass floods to a depth of 4 m over its crest. Before the raising in 1967, the weir incorporated three 8 m x 6 m Stoney sluices, operated either electrically or manually, and three 3 m x 2,7 m hand-operated radial gates. The Stoney gates are intended for venting sediment while the radial gates control flow to the main canal.

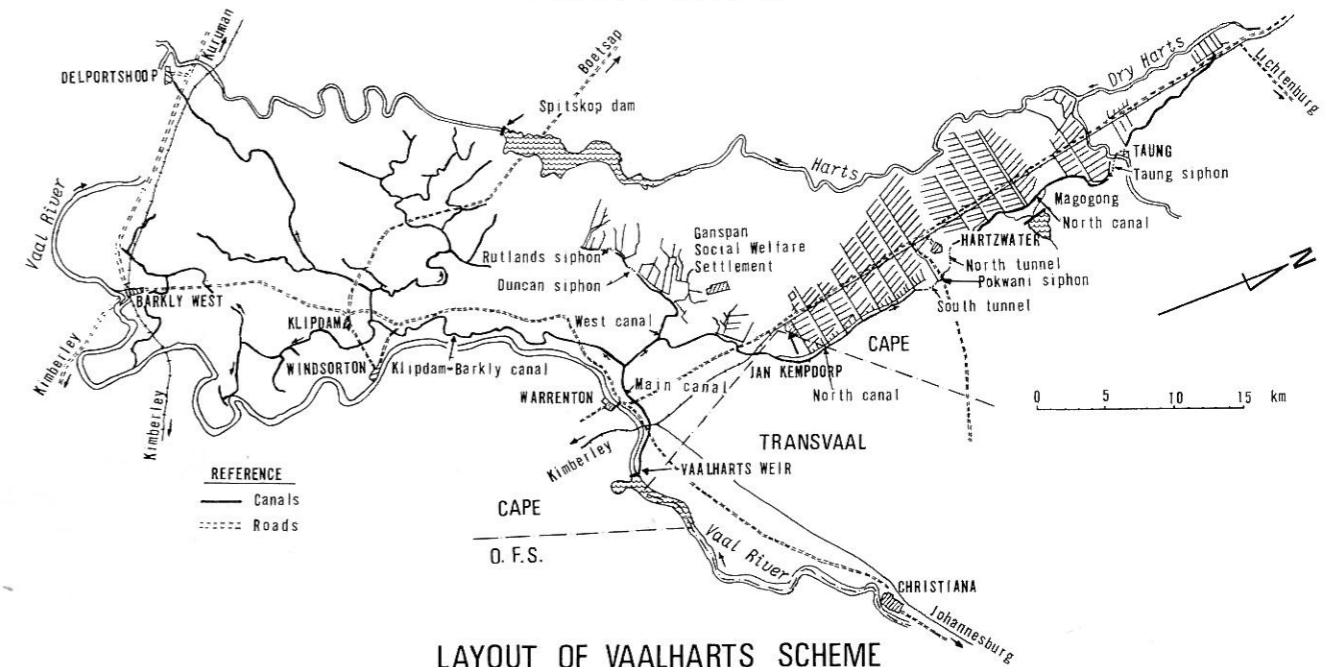
In 1967, when the need for additional balancing storage in the lower Vaal became evident, the weir and Stoney sluices were raised by 1,27 m and crest gates in the form of fish-belly flaps were installed on the overspill section. The raising increased the reservoir capacity by 24 097 000 m³.

The main canal, with a head capacity of 28,3 m³/s, runs parallel to the Vaal river for about 13 km to where the Klipdam-Barkly canal branches off, then northwards through a 3 km long deep cut, 16 m at its deepest part, to where the canal bifurcates. The main branch, with an initial capacity of 20 m³/s, runs in a general northerly direction for some 77 km. The minor branch, 21 km long, has a head capacity of 3,4 m³/s. The total irrigable area commanded by the Vaalharts canal system is 34 244 ha.

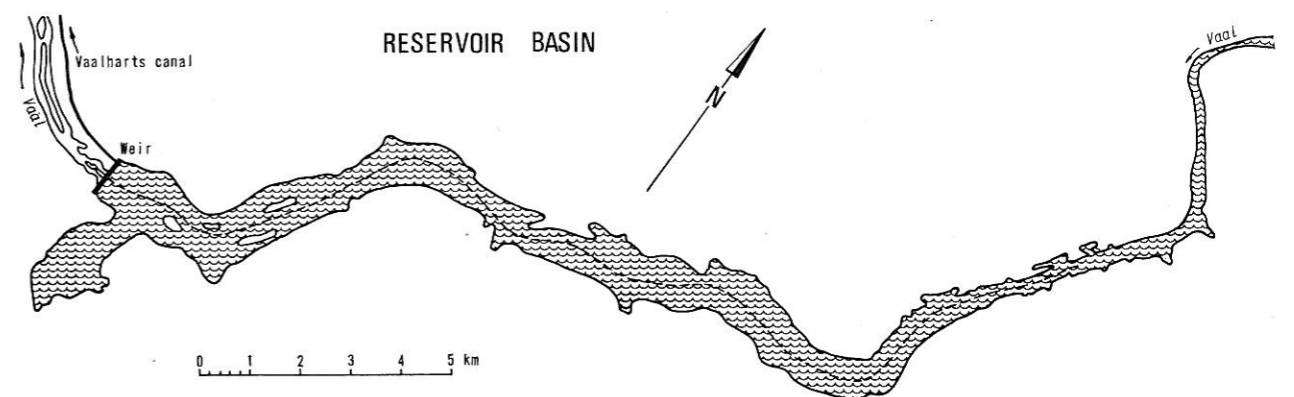
The Klipdam-Barkly canal, which takes off from the main canal 13 km downstream of the Vaalharts weir, has a head capacity of 4,9 m³/s and serves a scheduled area of some 2 633 ha situated between the Vaal and Harts rivers.



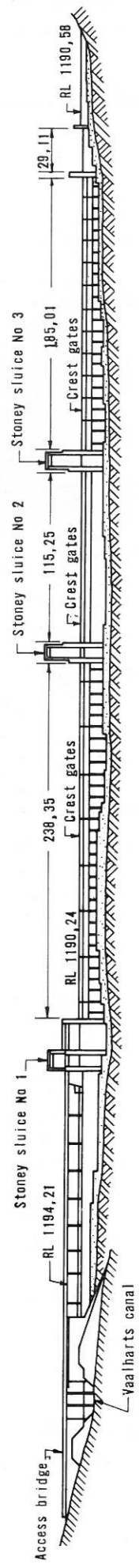
LOCALITY SKETCH



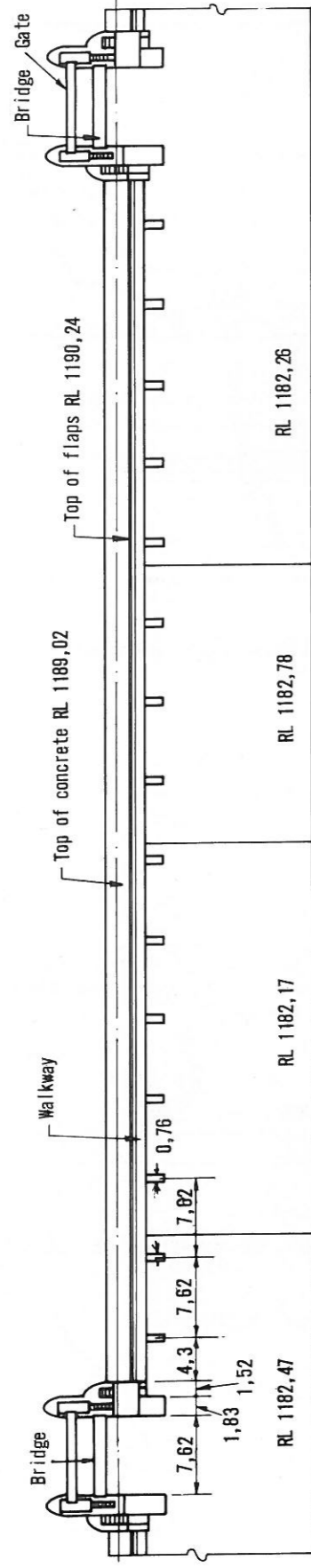
LAYOUT OF VAALHARTS SCHEME



RESERVOIR BASIN

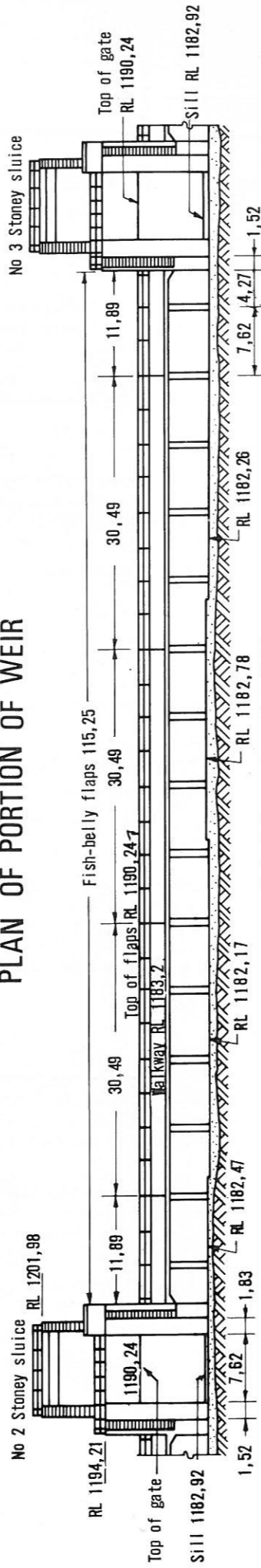


DOWNSTREAM ELEVATION

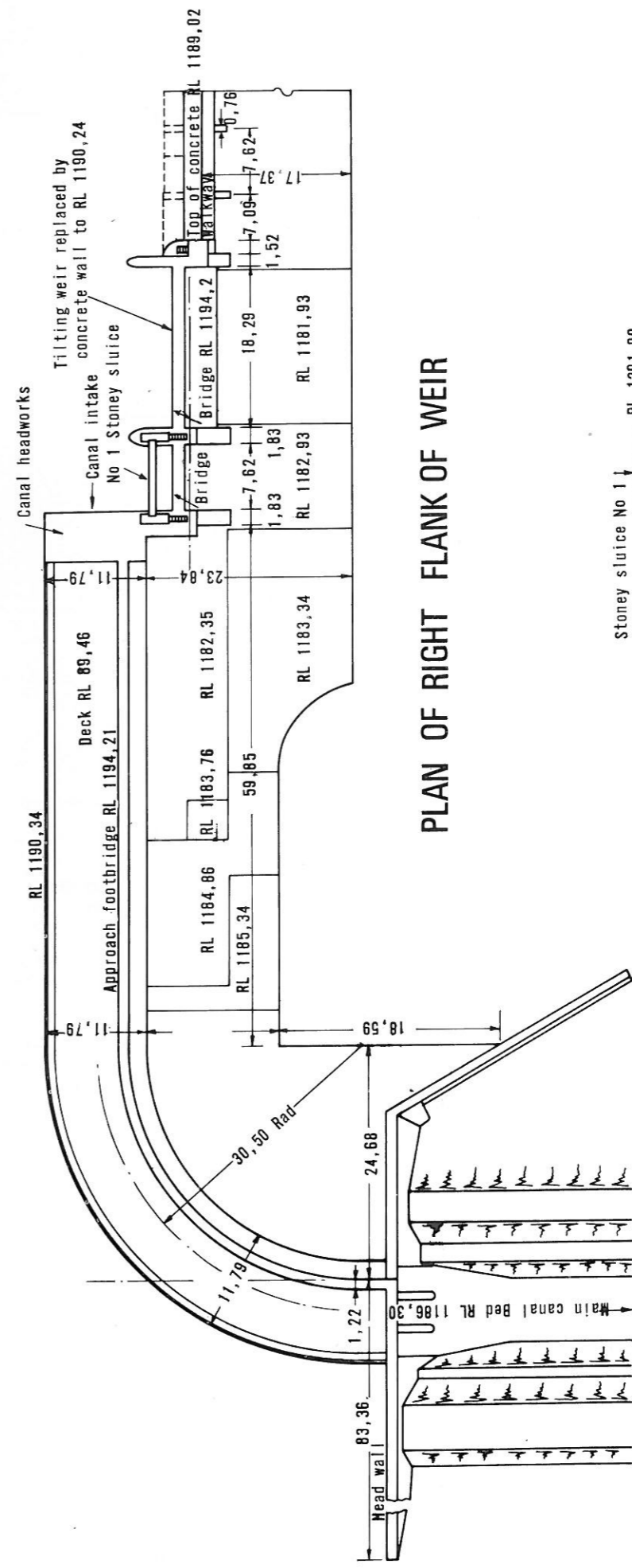


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PLAN OF PORTION OF WEIR

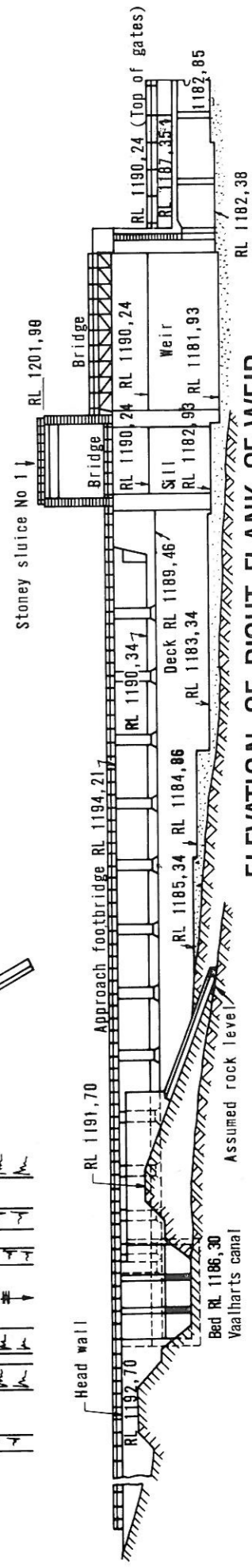


ELEVATION OF PORTION OF WEIR

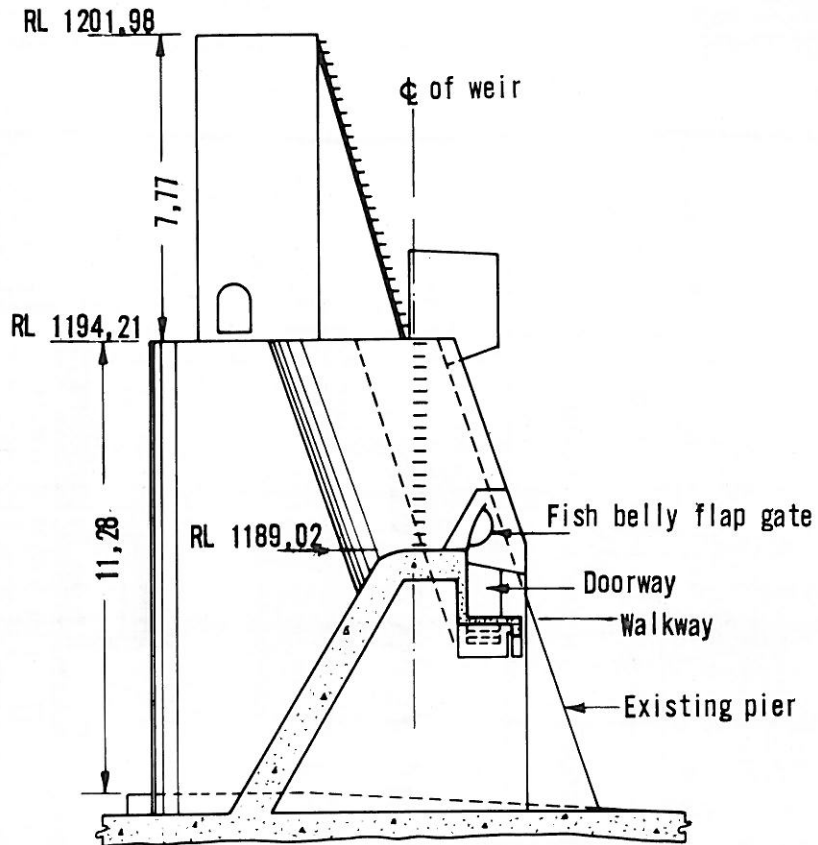


PLAN OF RIGHT FLANK OF WEIR

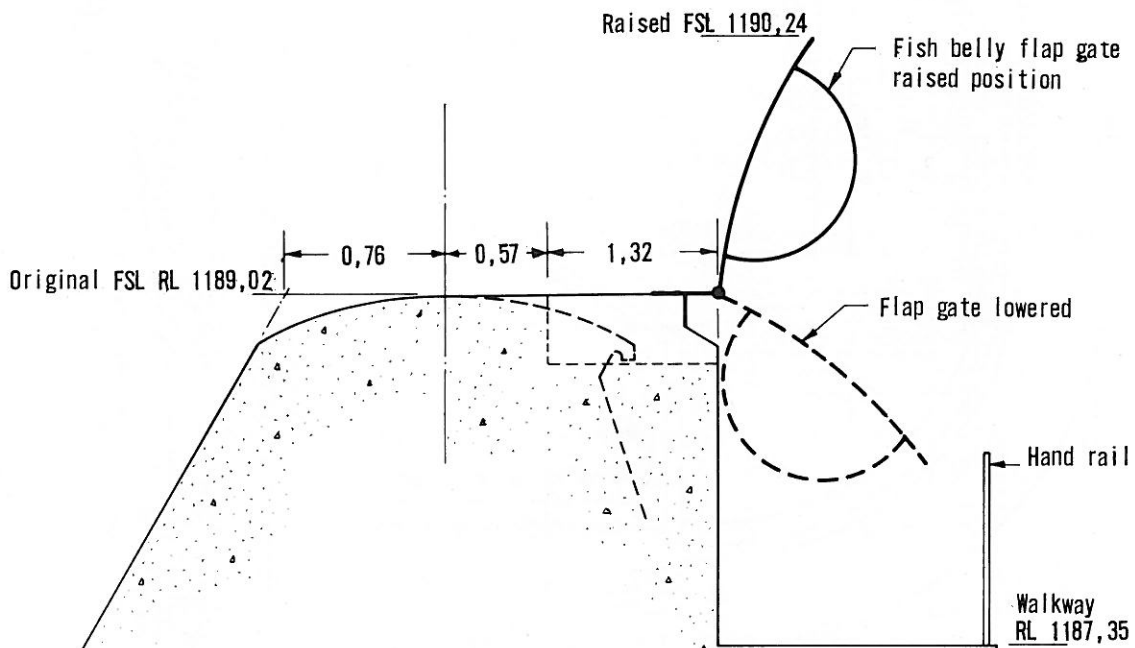
5



ELEVATION OF RIGHT FLANK OF WEIR



OVERSPILL SECTION



OVERSPILL CREST AS RAISED WITH FISH BELLY FLAP GATE