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West Pakistan Engineering Congress, 1960.

12b. D.B. Simons & E.V. Richardson.
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13. Vanoni—Transportion of suspended sediment by Water.
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14. P. Daul, R. Durand & Condolios "Introduction 'a' 1' etude de la saltatiun Houill Blahche 1950,
No. 6 Engl. Transc Supp No. 1, 1955.

15. F.F. Hdigh, "Silt Excluders".
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A.S.C.E. Transanctions Vol. 117, 1952.

17. Koonsman & Albertson, "Vortex Silt Trap".
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18. H.M. Martin & Caurlson,
Model studies of sediment control structures on dimensions of Dam.

Minnesota International Hydraulic Convention 1953.

TABLE I

Top of slab=438·01 QE/QF=12·5%

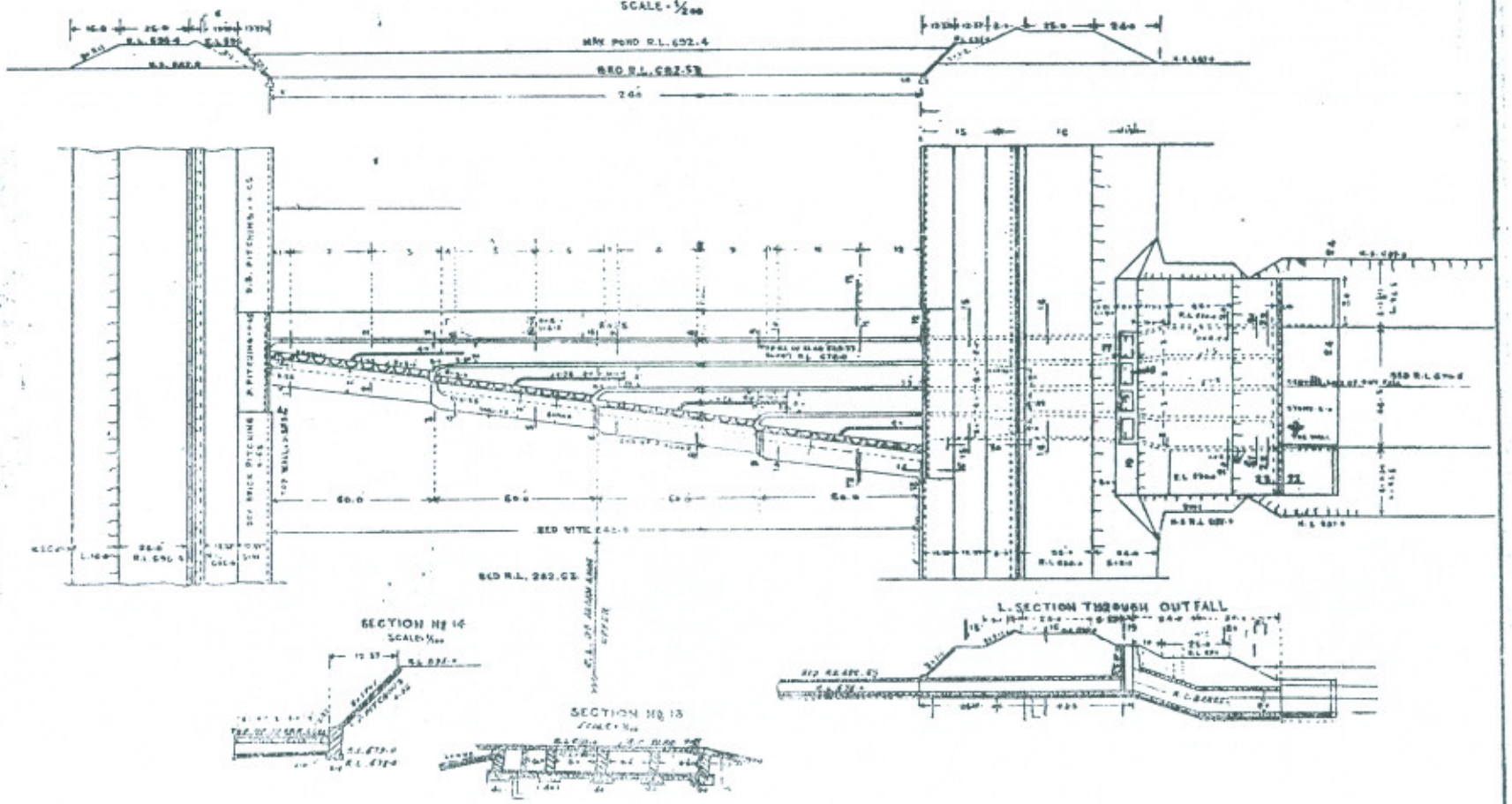
Serial No.	Description of samples	% clay ·002 mm.	% fine sediment ·075 mm.	% medium sediment 0·75—0·2 mm.	% course sediment 0·9	Mean dia. of bed silt (·075) mm.	Mean dia. of entire sample mm.
1	Silt charged u/s of ejecter (in coming silt).	...	7 ·5	57·1	35·4	·193	·180
2	Silt extrated by ejector ...	...	6 ·8	49·2	44·0	·176	·166
3	Silt collected from canal below ejector.	4·3	75·4	20·6	4·0	·155	‘064

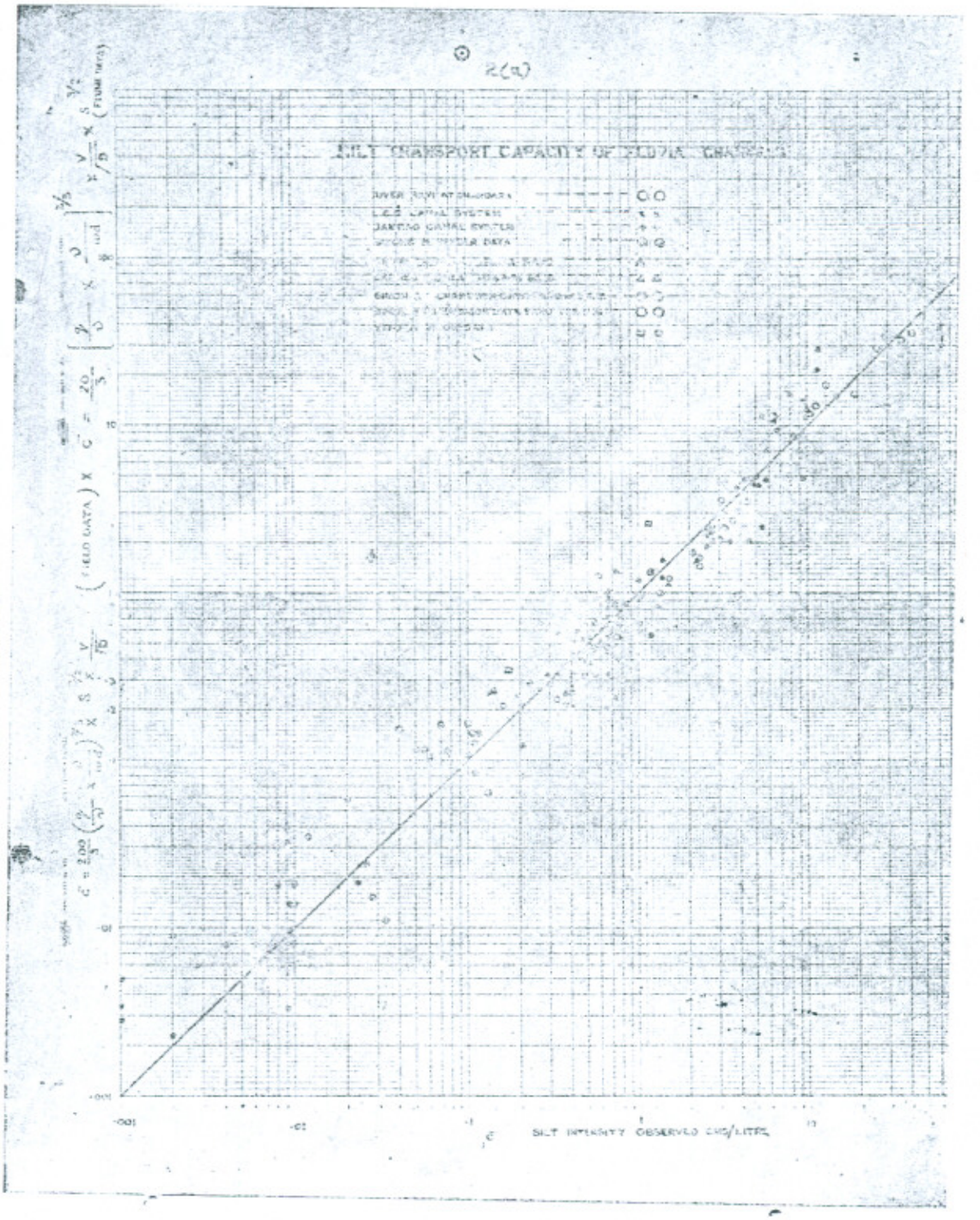
FIG. 1

THAL MAIN CANAL

NORMAL CROSS SECTION

SCALE - 1/200




SILT TRANSPORT CAPACITY OF ALLUVIAL CHANNELS
SILT INTENSITY OBSERVED GMS/LITRE

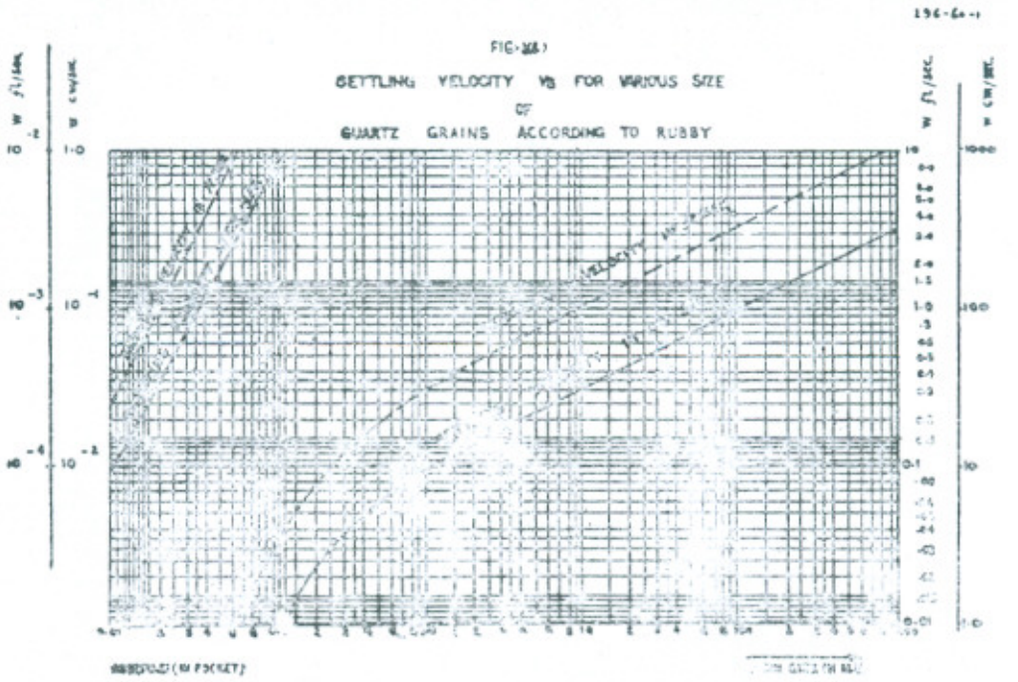


Fig. 3 (b)

Rasul Hydel Head Race : with Four Silt Ejector Pipes in right bank of H. R. U/s of the regulator.

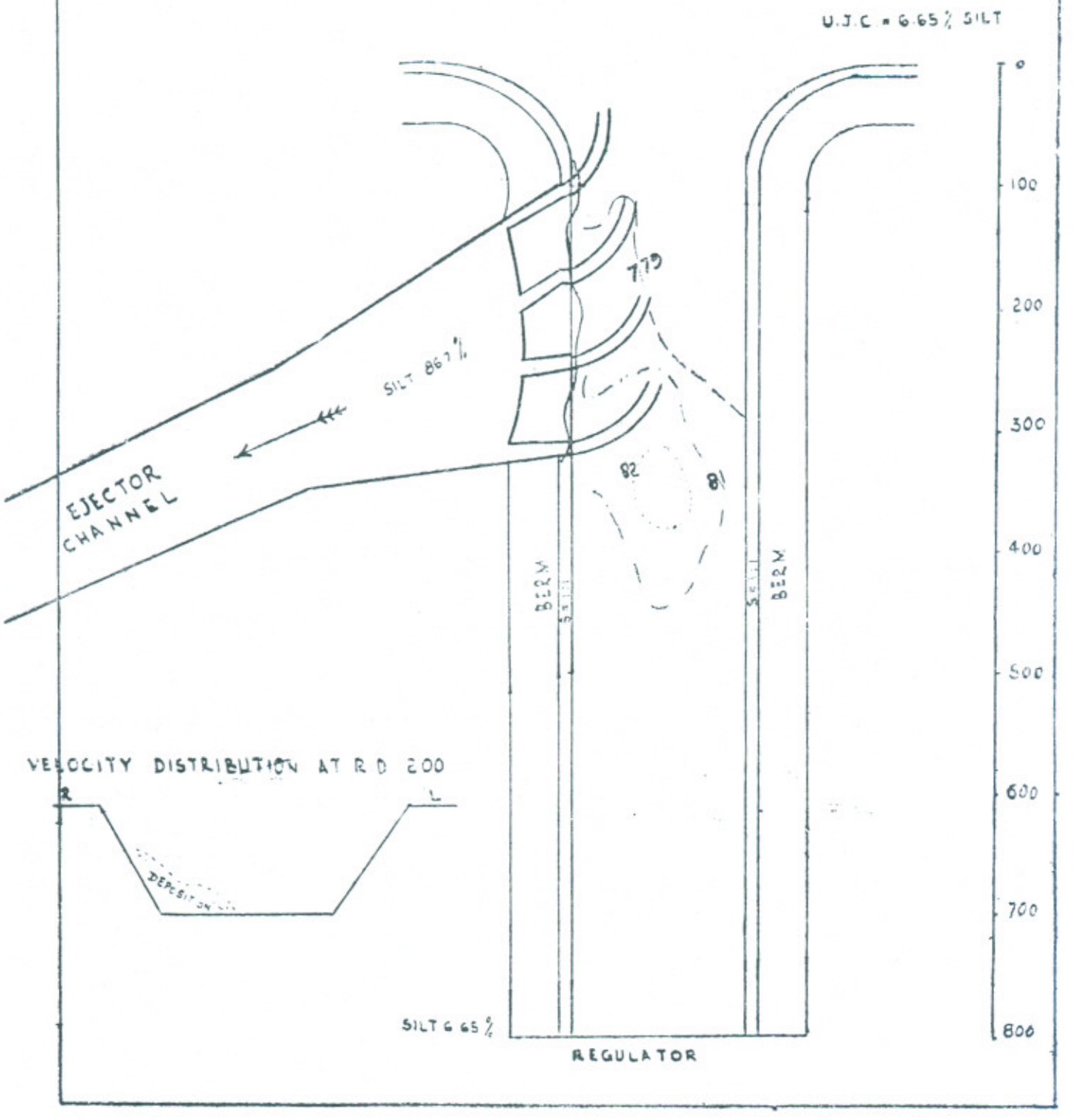
50 ft. pipe extension towards the offtaking point.



Bed configuration after 24 hours run.

FIG 3(a)

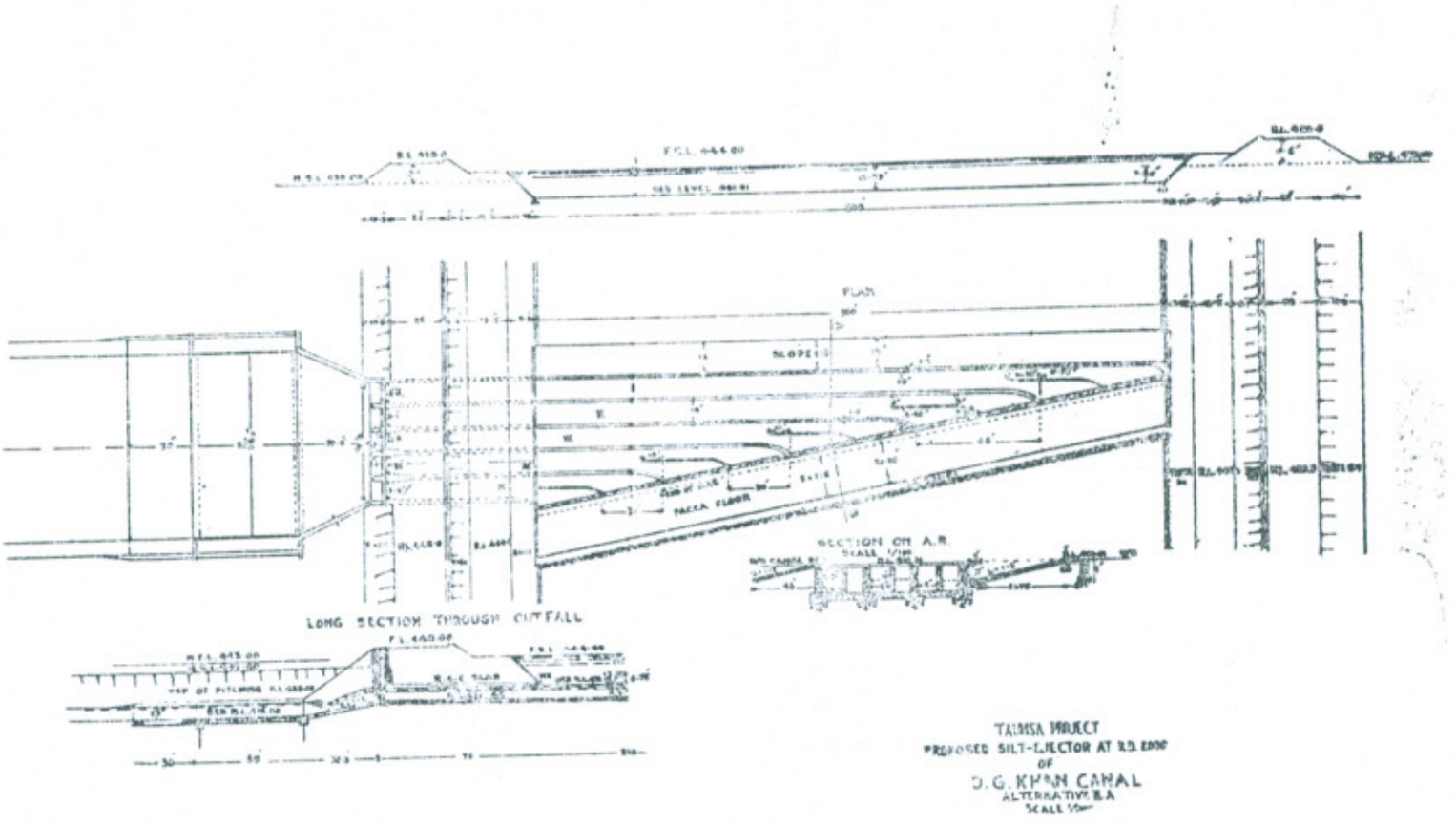
RASUL HYDEL HEAD RACE



563 G/1

FIG. 4

X-SECTION AT R.D. 2000 OF D.G. KHAN CANAL



TARBELA PROJECT

PROPOSED SILT-EJECTOR AT R.D. 2000

OF

D.G. KHAN CANAL

ALTERNATIVE B.A

SCALE 1/50"

Fig. 6 (a)

Model of D. G: Khan Canal

Photograph showing flow conditions with raised slab.

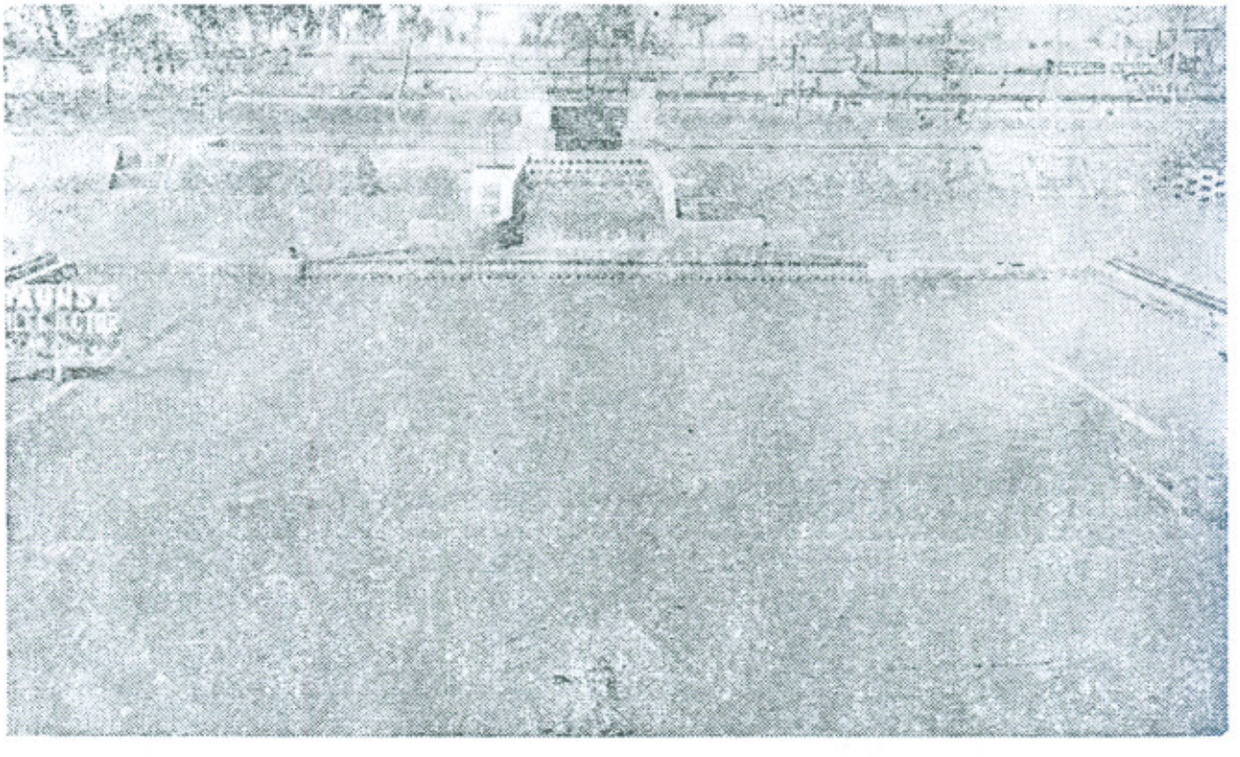
Diaphragm slab raised by 7 ft.



Fig. 6 (b)

Model of D. G. Khan Canal

Photograph showing flow conditions with raised slab.



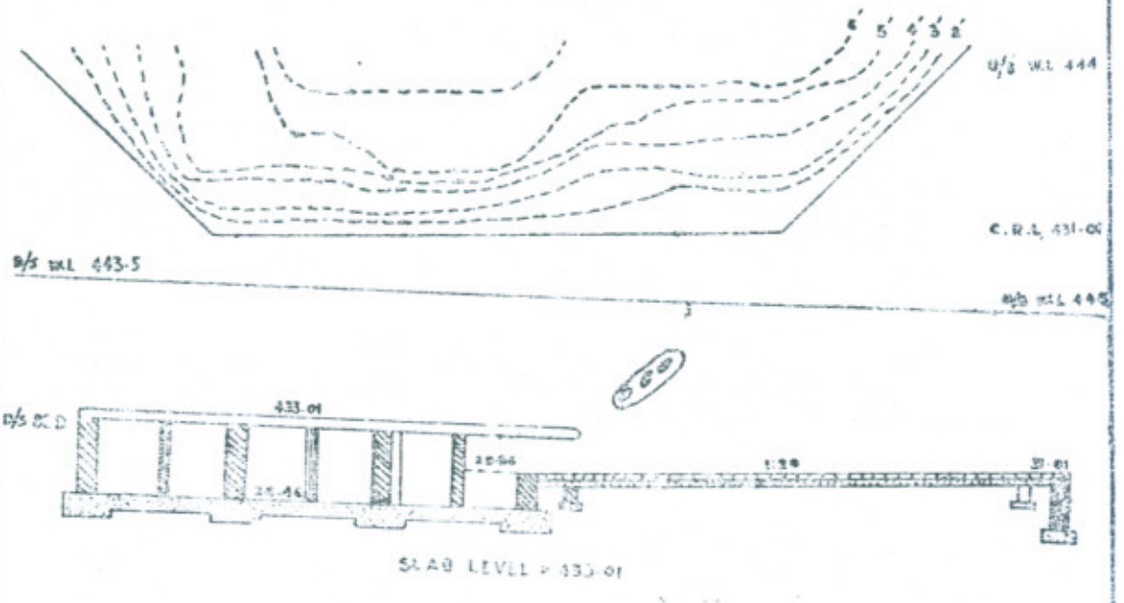
Diaphragm slab raised by 9 ft.

42 62/1

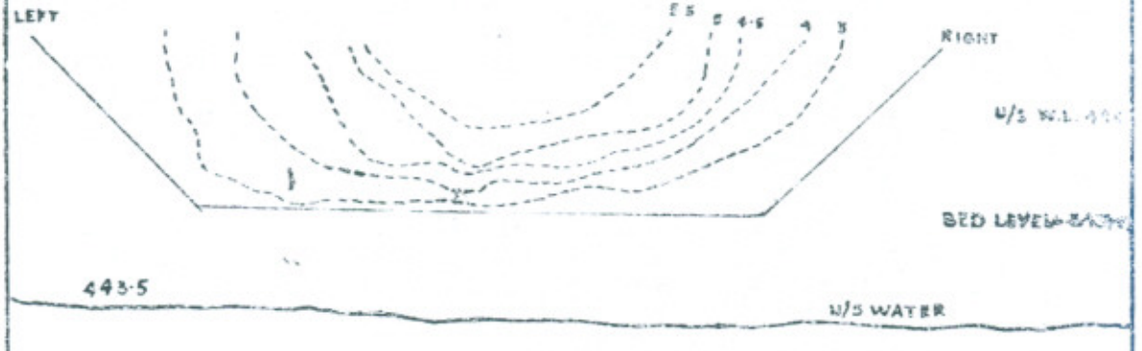
FIG. 7(a)

FAUNSA SILT EJECTOR

VELOCITY DISTRIBUTION



VELOCITY DISTRIBUTION



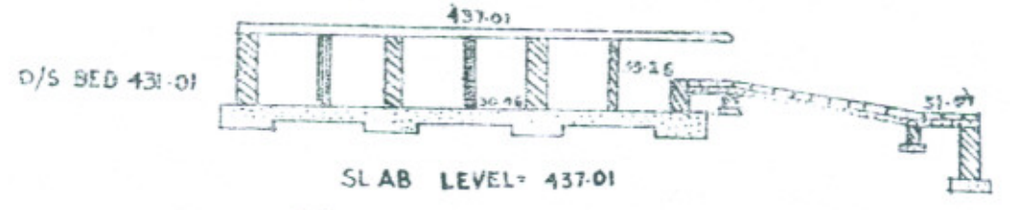


FIG.7(C)

TAUNSA SILT EJECTOR

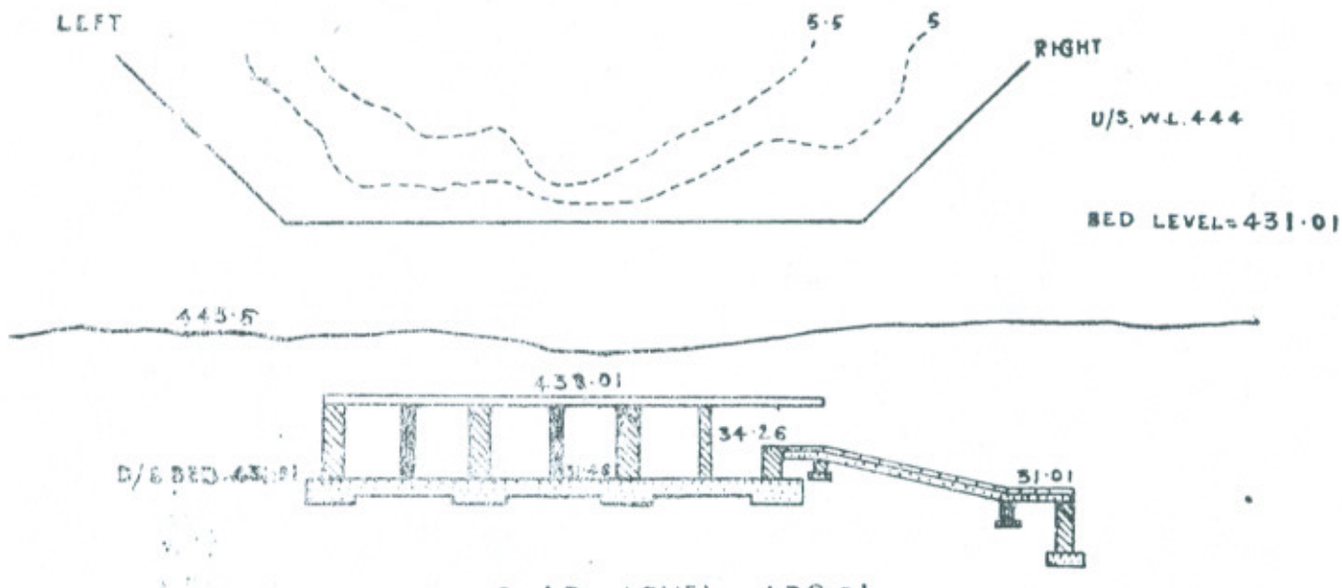


FIG 8(a)
TAUNSA SILT EJECTOR
EFFICIENCY AGAINST d/D

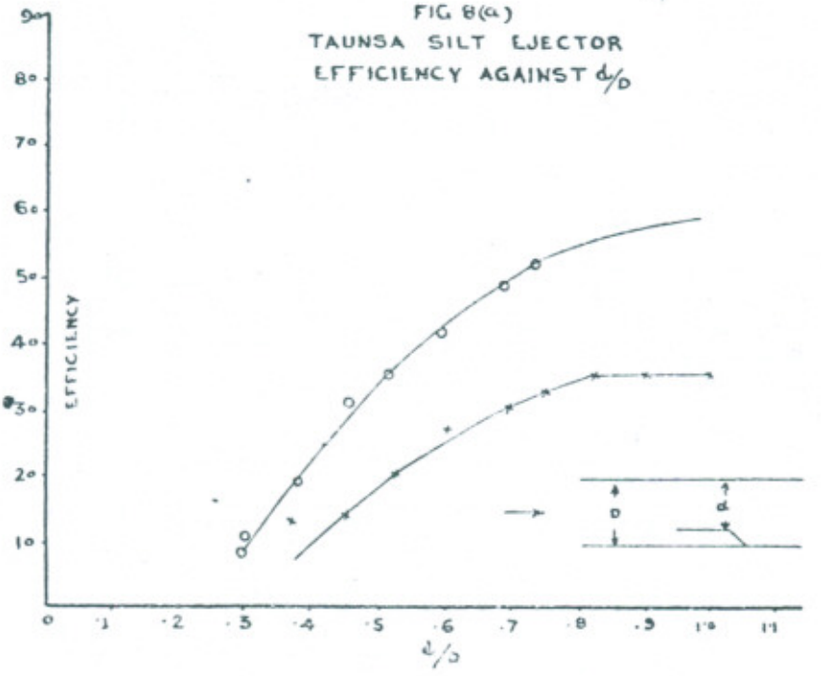


FIG 8(b)
TAUNSA SILT EJECTOR
EFFICIENCY AGAINST FROUDE NUMBER = $\frac{V}{\sqrt{gd}}$

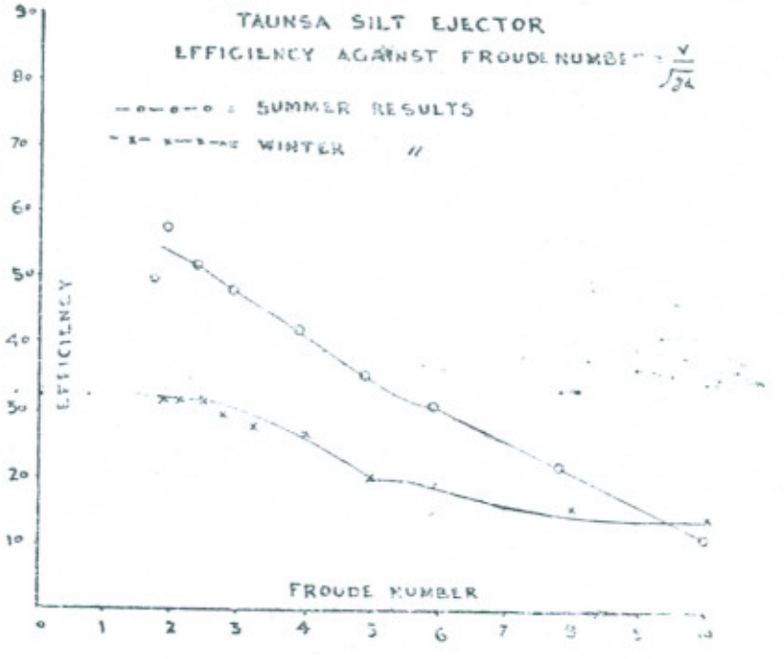
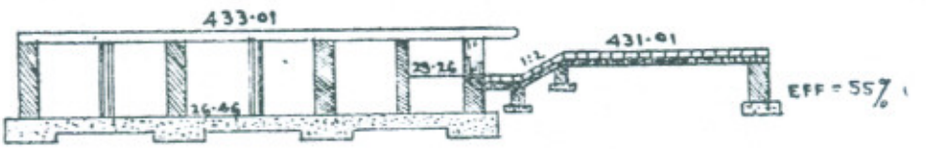


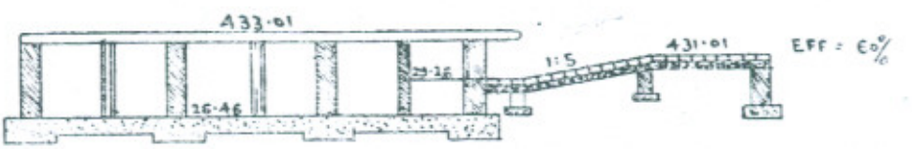
FIG. 9

D.I.R. NO: 168.55.2.

TAUNSA SILT EJECTOR

SLOPES U/S OF EJECTOR





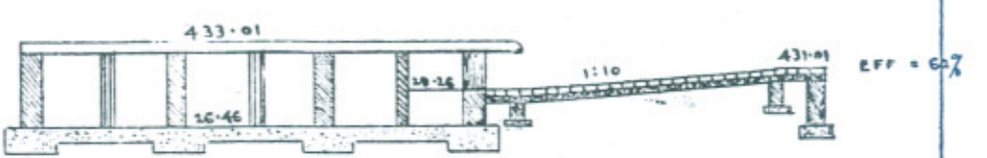




FIG. NO. 10(a)

SEDIMENT EXCLUSION MODEL

GRAPH BETWEEN EFFICIENCY AND FROUDE NO.

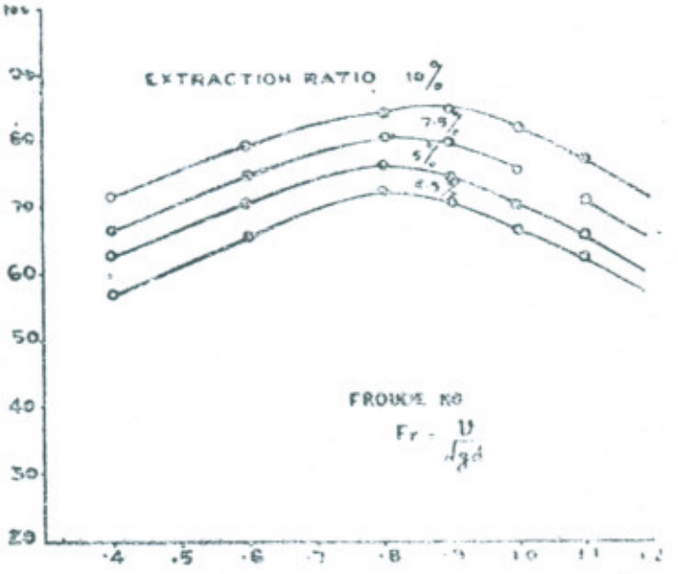


FIG. 10(b)

GRAPH BETWEEN EFFICIENCY AND DIA OF THE VORTEX TUBE

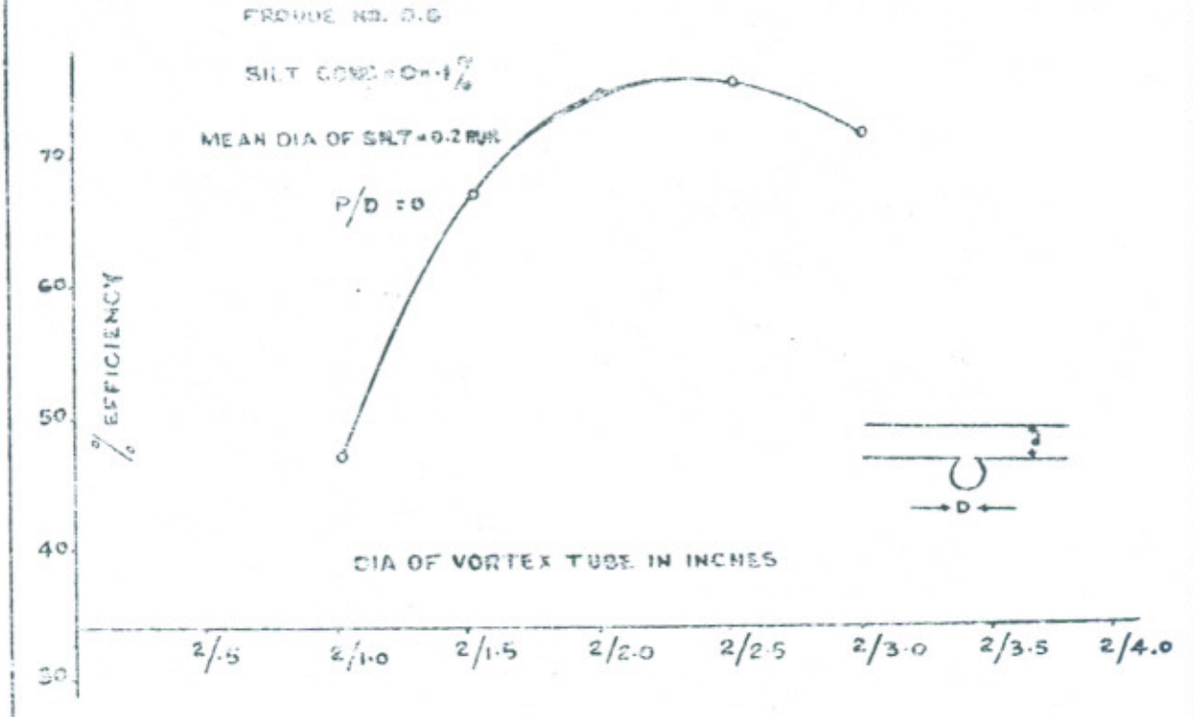
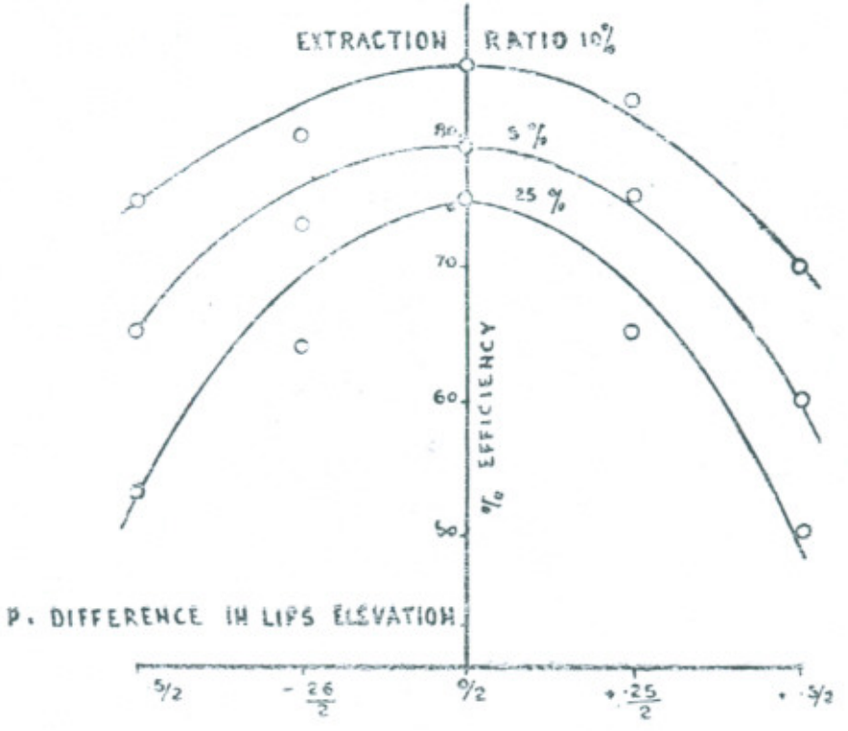


FIG. II(a)

SEDIMENT EXCLUSION MODEL

GRAPH BETWEEN EFFICIENCY & ELEVATION OF TUBE LIPS



SEDIMENT EXCLUSION MODEL

GRAPH BETWEEN EFFICIENCY & SILT CONCENTRATION

EXTRACTION RATIO 10%

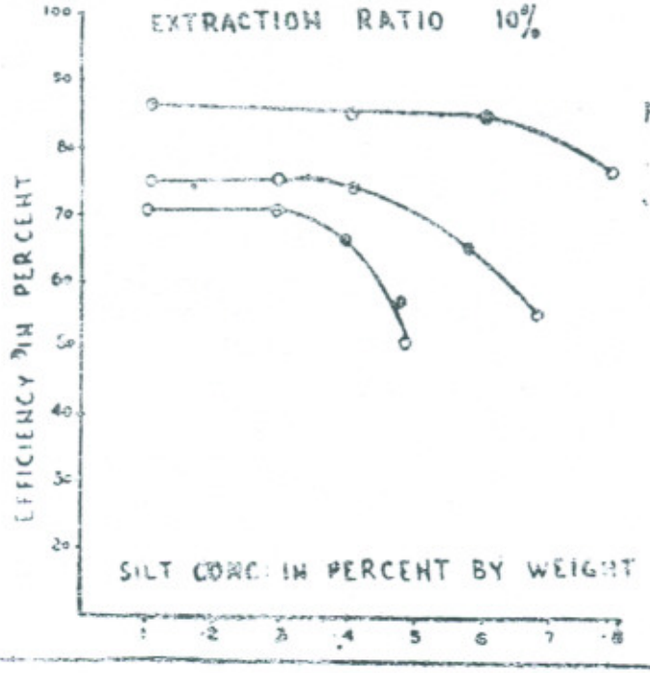


FIG: II(b)

FIG 12

D.G.KHAN CANAL SILT EJECTOR
VORTEX TUBE TYPE

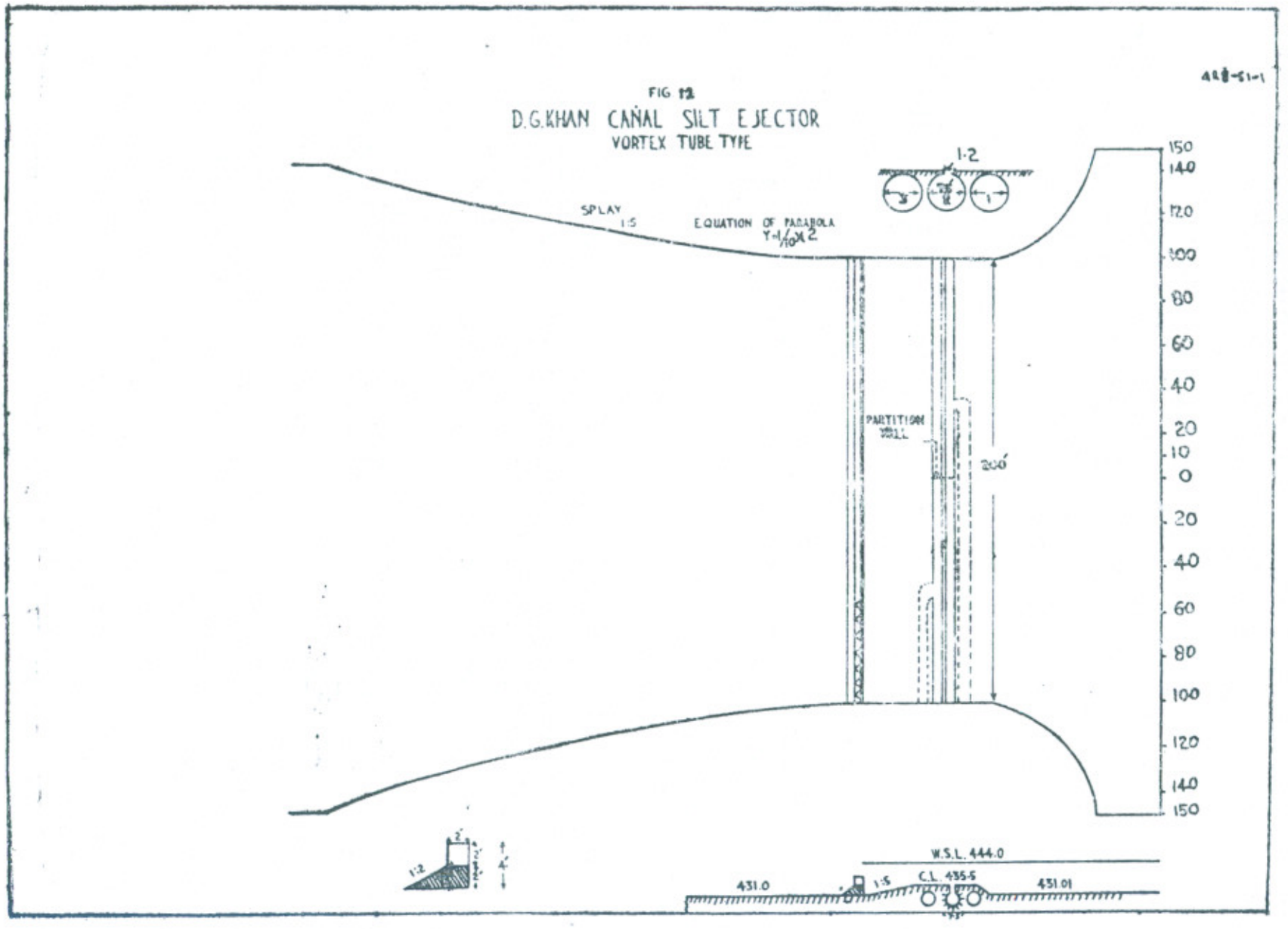


FIG-13(a)

VORTEX TYPE EJECTOR - D.G.KHAN CANAL

EFFICIENCY AGAINST DISCHARGE EXTRACTION FOR DIFFERENT CREST LEVELS

FLUMING = 66%

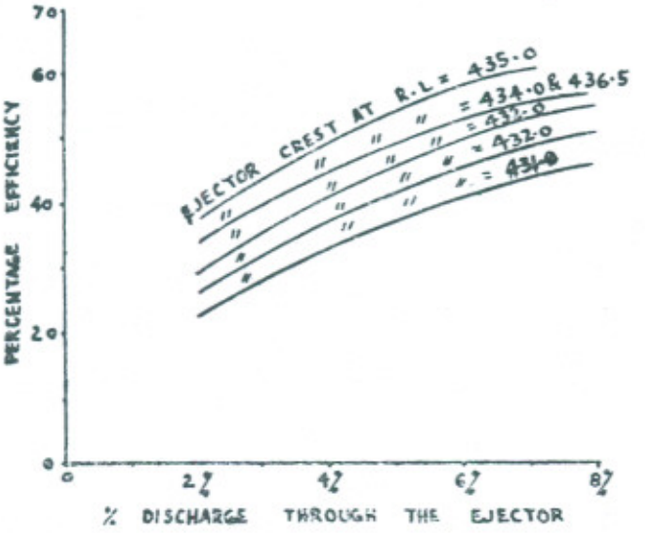
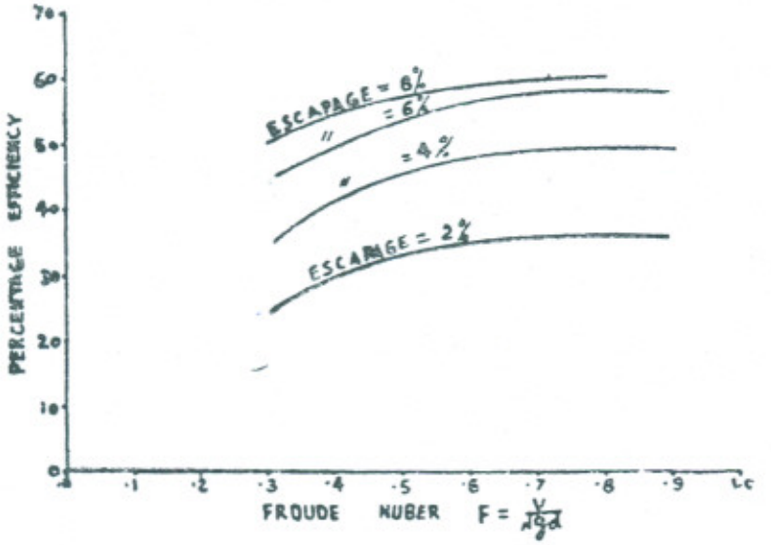


FIG-13(b)

VORTEX TYPE EJECTOR D.G.KHAN CANAL.

EFFICIENCY AGAINST FROUDE NO. FOR DIFFERENT EXTRACTION RATIOS



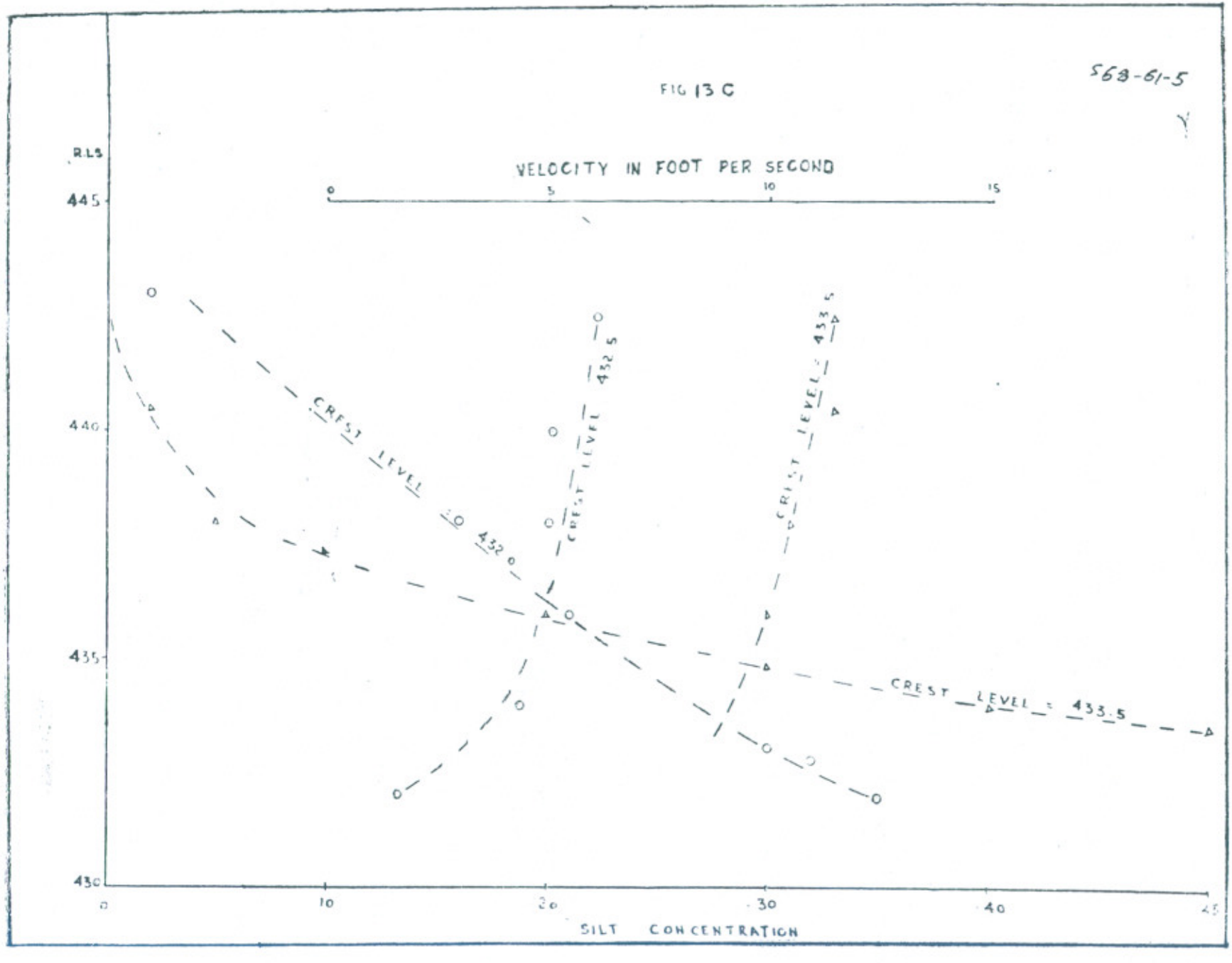

568-61-5
FIG 13 C
VELOCITY IN FOOT PER SECOND
0
5
10
15
RLS
445
440
435
430
CREST LEVEL = 432.0
CREST LEVEL = 432.5
CREST LEVEL = 433.5
CREST LEVEL = 433.5
0
10
20
30
40
45
SILT CONCENTRATION

FIG. 14 (a)

VORTEX TYPE EJECTOR

EFFICIENCY AGAINST DISCHARGE EXTRACTION FOR DIFFERENT FLUMING RATIOS.

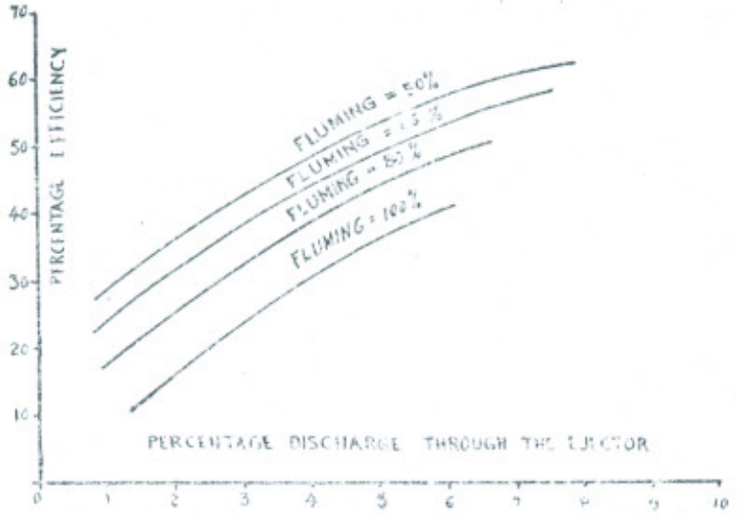


FIG. 14 (b)

COMPARISION OF VORTEX TYPE AND CONVENTIONAL TYPE EJECTOR

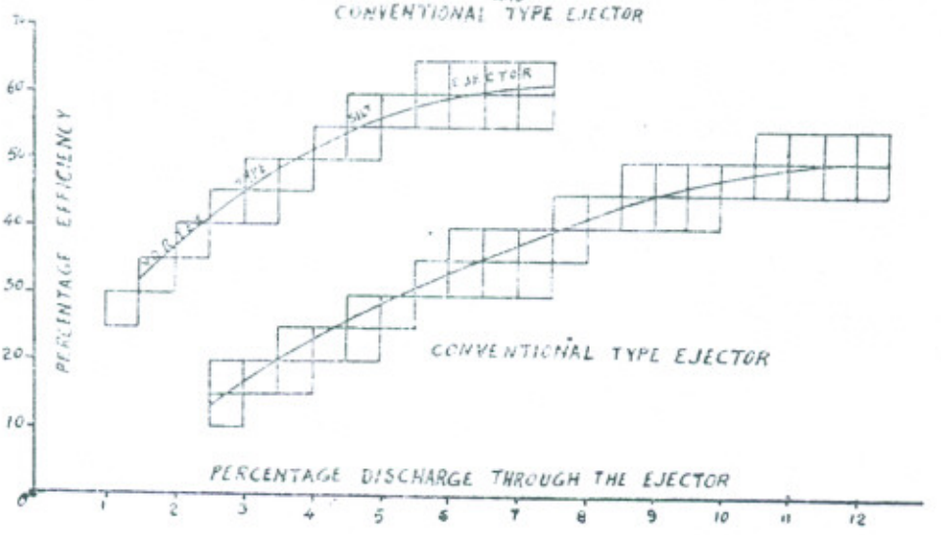


FIG:14(C)

D. G. KHAN CANAL SILT EJECTOR

GRAPH BETWEEN R.L. D/S OF EJECTOR AND PERCENTAGE OF CANAL DISCHARGE PASSING THROUGH THE EJECTOR

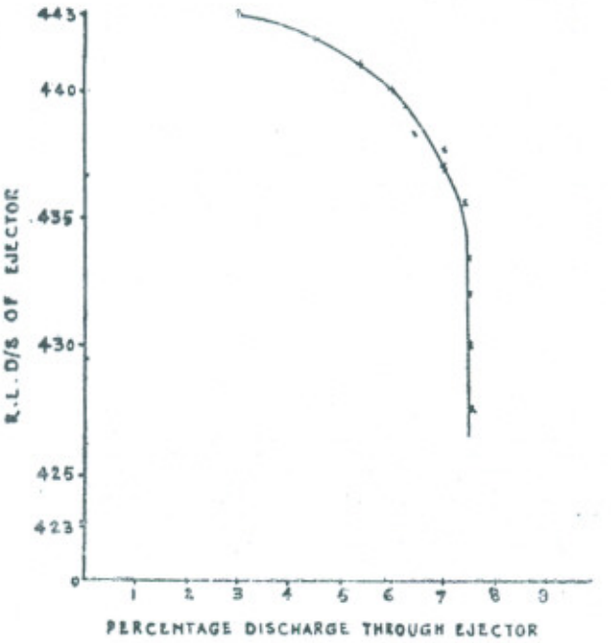
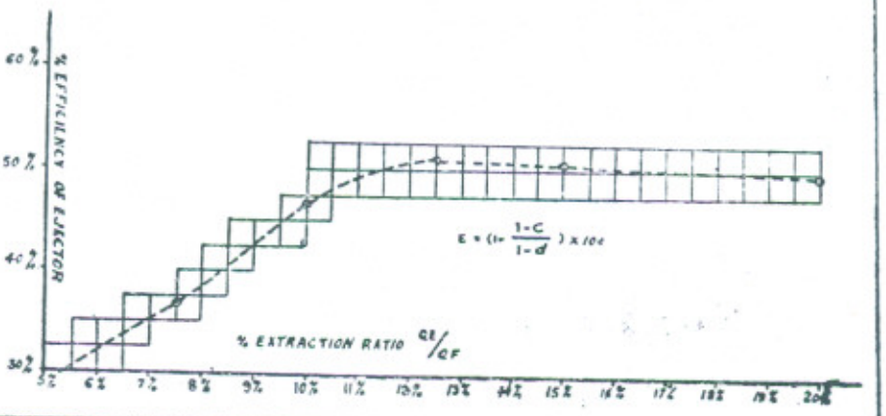


FIG:5

TAUNSA SILT EJECTOR

GRAPH BETWEEN SILT EJECTOR AND EXTRACTION RATIO



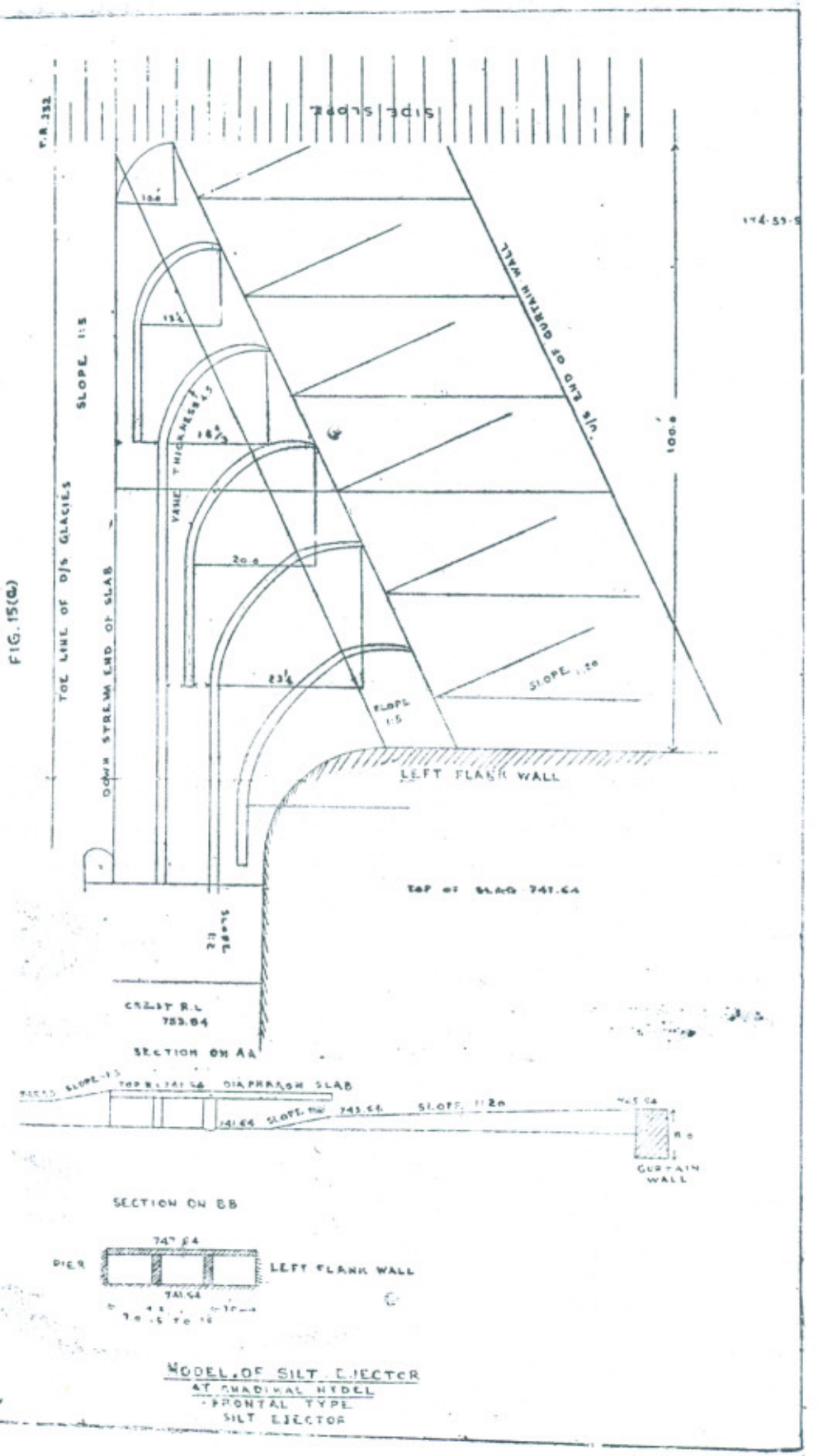
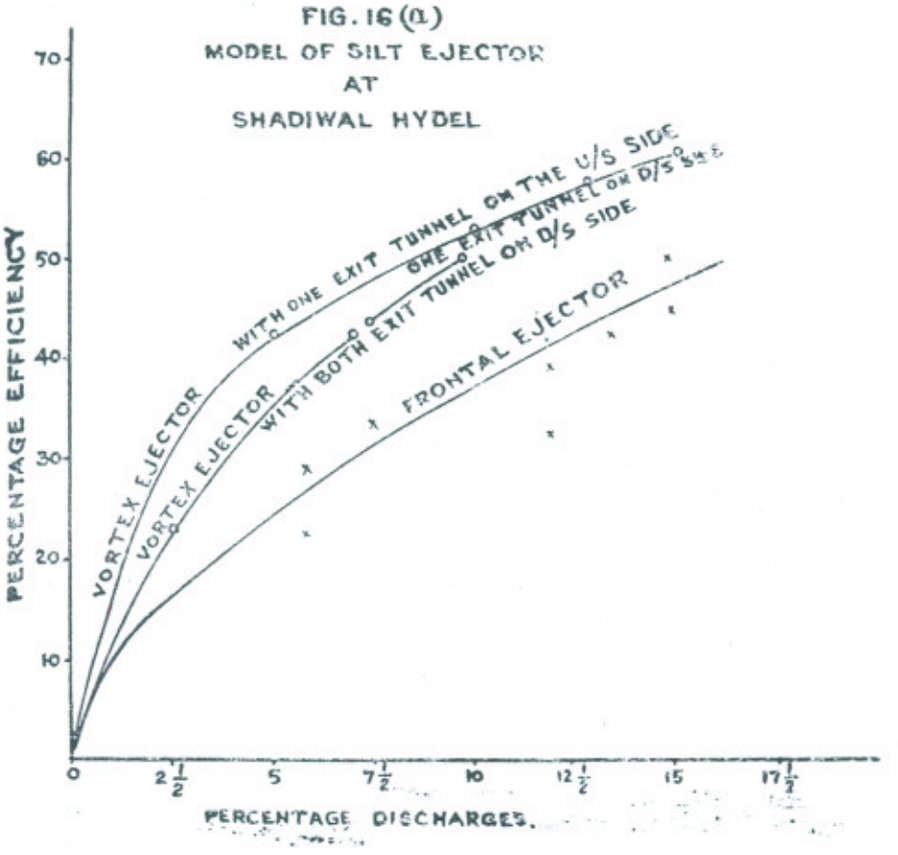


FIG. 15(a)

MODEL OF SILT EJECTOR
AT CHADIYAL HYDEL
FRONTAL TYPE
SILT EJECTOR

MODEL OF SILT EJECTOR AT SHADIWAL HYDEL
CREST R.L. 153.64
SLOPE 1:2
PIER
CREST
R.L. 153.64
SLOPE 1:2
CREST LINE
LEFT FLANK WALL 19.6
THE FLANK WALL OF SPILLWAY
SECTION A-A
SECTION B-B
CURVED FORM N
SLOPE 1:5
SLOPE 1:5
UP STREAM END OF CREST
DOWN STREAM END OF CREST
SLOPE 1:5
DOWN STREAM GLACIS
SLOPE
SLOPE

FIG. 16 (a)
MODEL OF SILT EJECTOR
AT
SHADIWAL HYDEL



174-53-4

T.R. 25L

FIG: 16b

MODEL OF SILT EJECTOR AT SHADIWALL HYDEL

VELOCITIES AND SILT DISTRIBUTION ALONG

VERTICAL AT THE INLET OF VORTAX ALONG
AND FRONTAL EJECTOR

VELOCITY SCALE 1.0 = 5 mm

SILT SCALE 1 CC = 1 CM

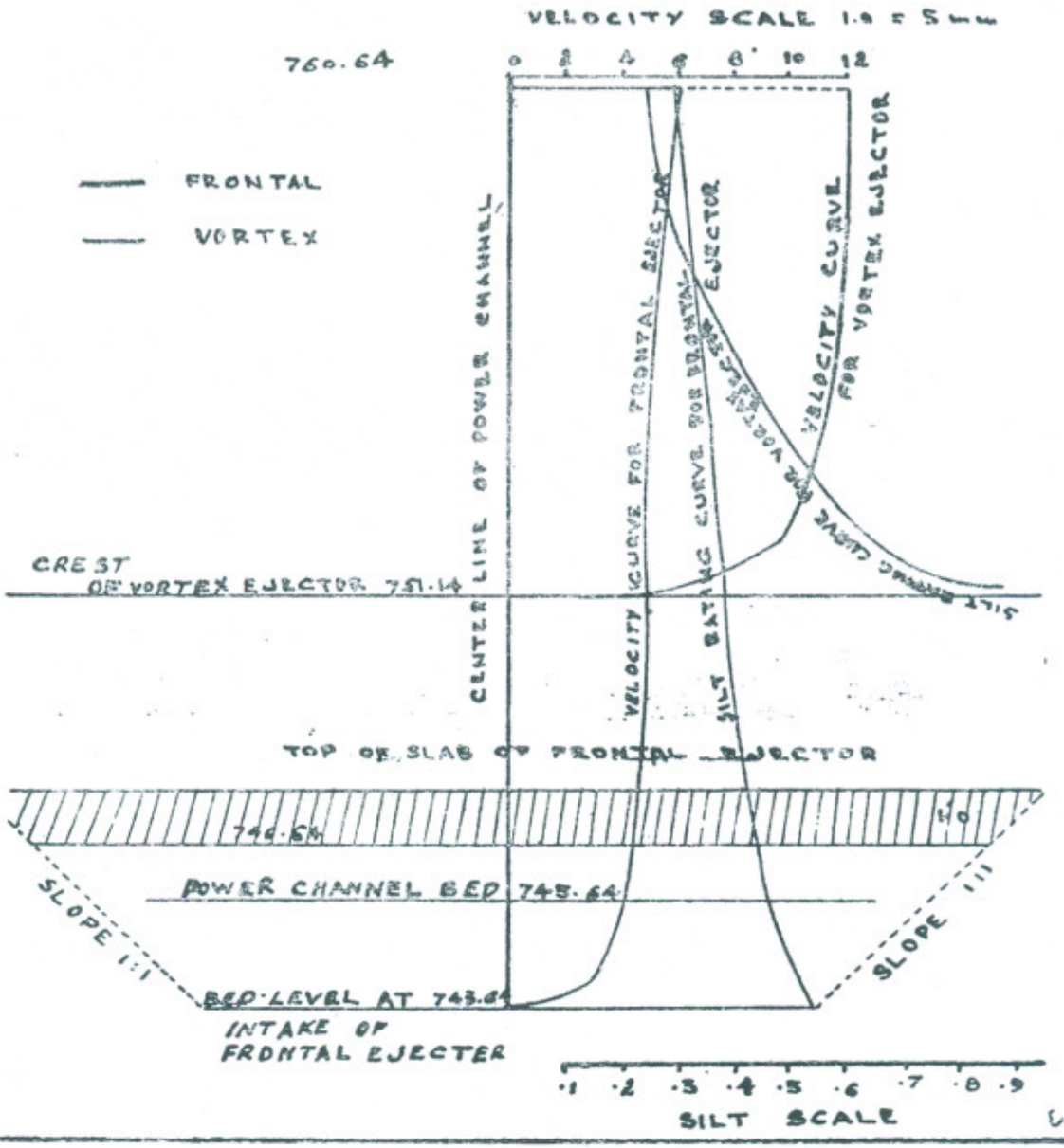
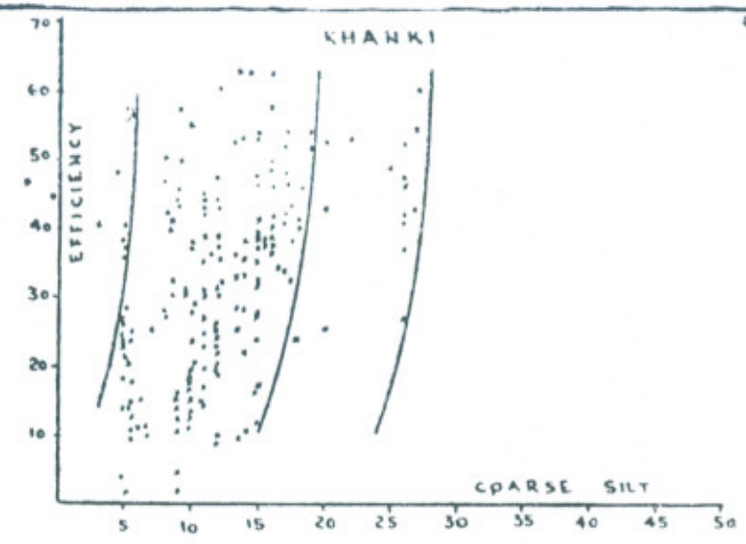
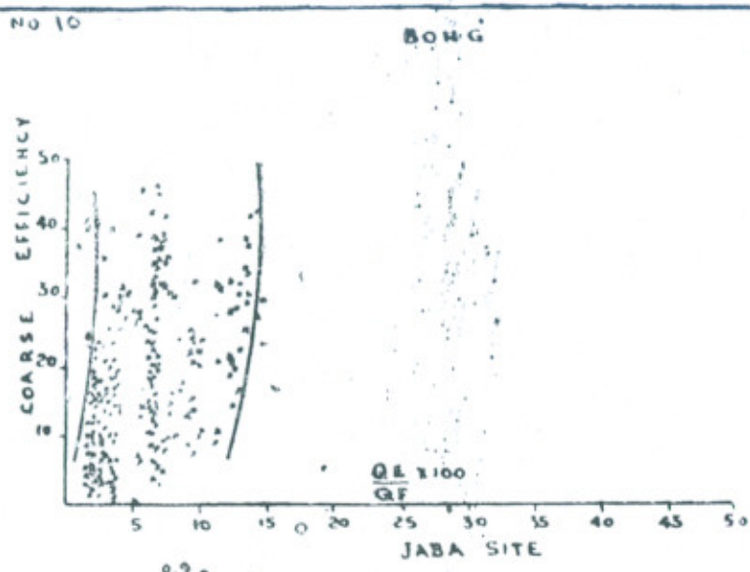
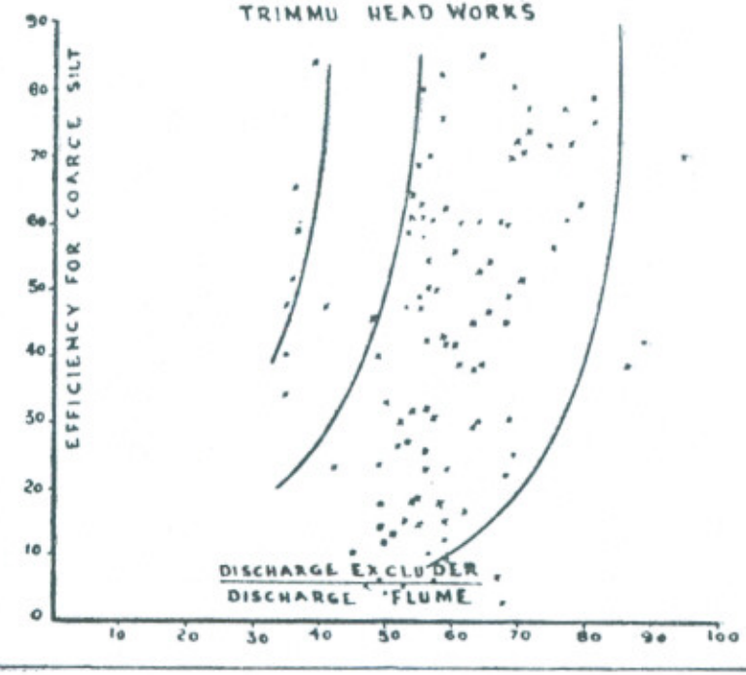


FIG NO 10

45 62/2







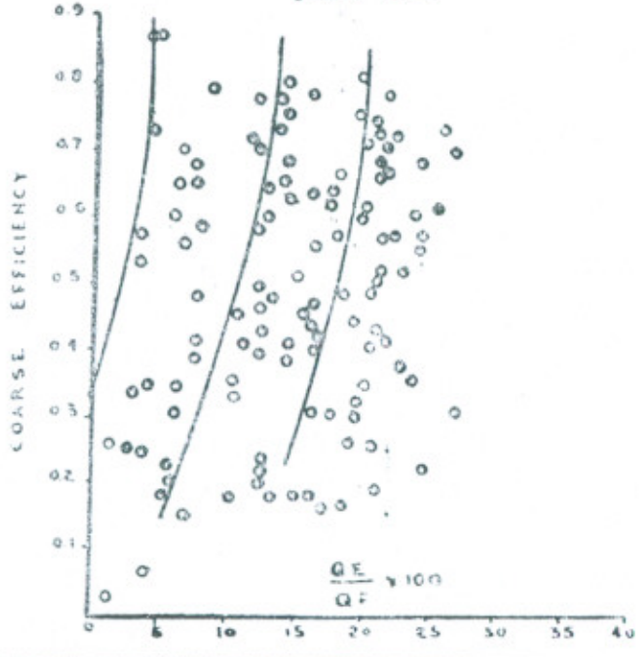
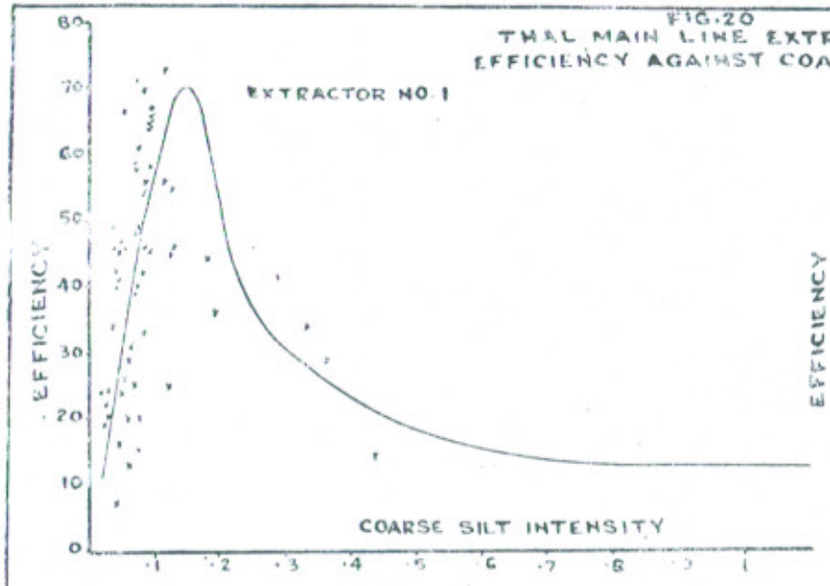


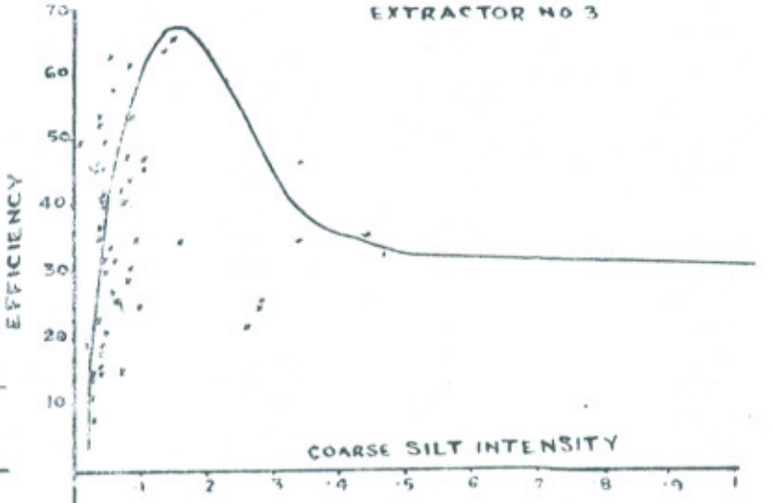
FIG.20

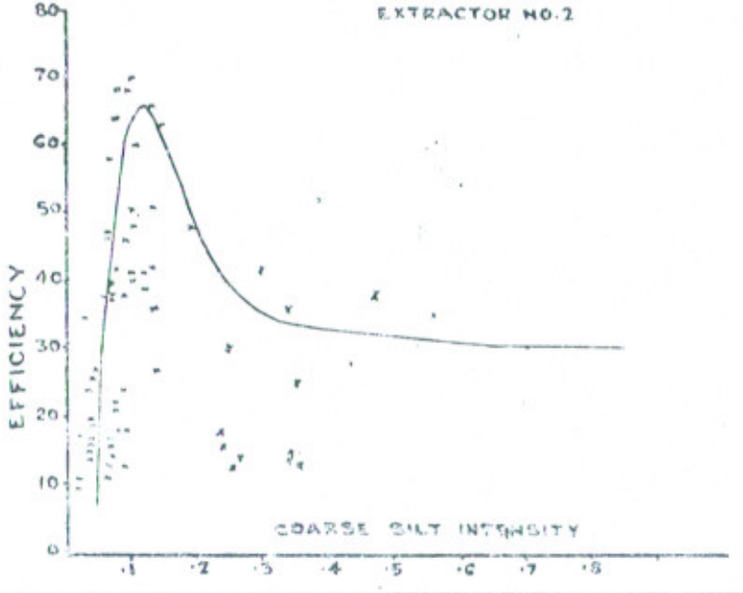
THAL MAIN LINE EXTRACTORS

EFFICIENCY AGAINST COARSE SILT INTENSITY

45 62/2







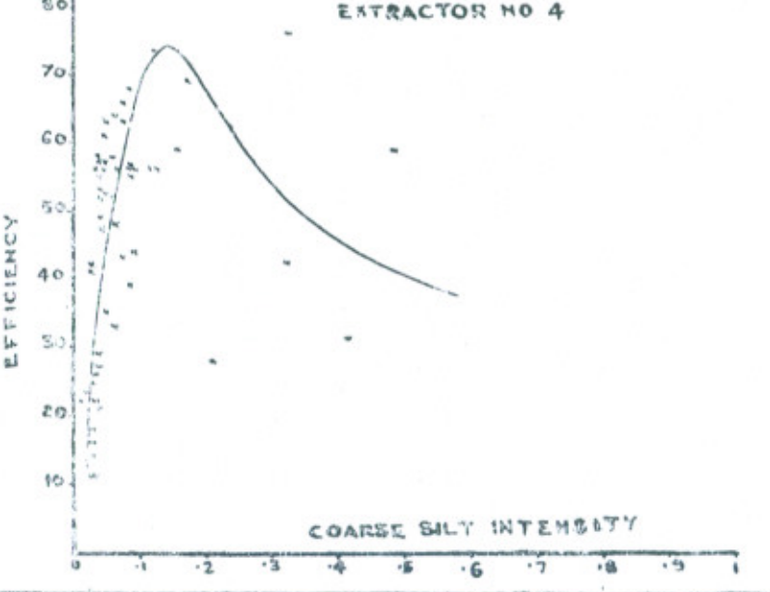
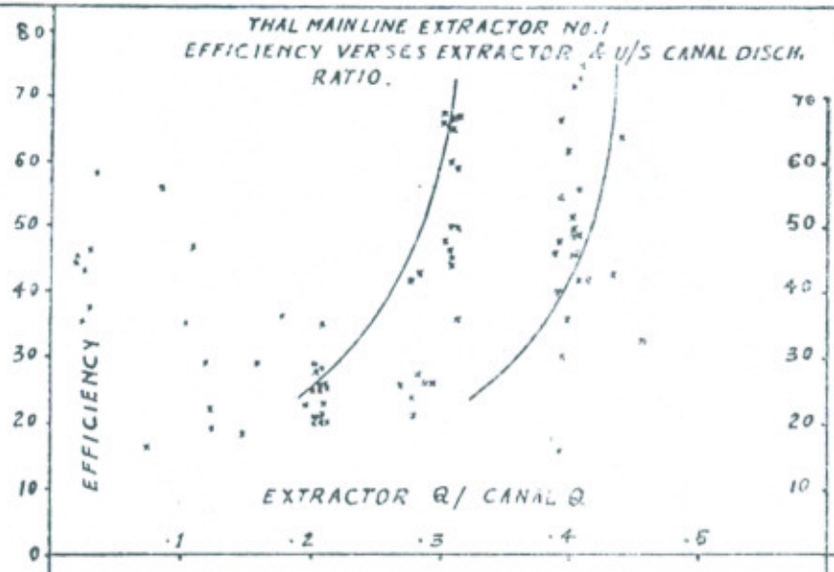
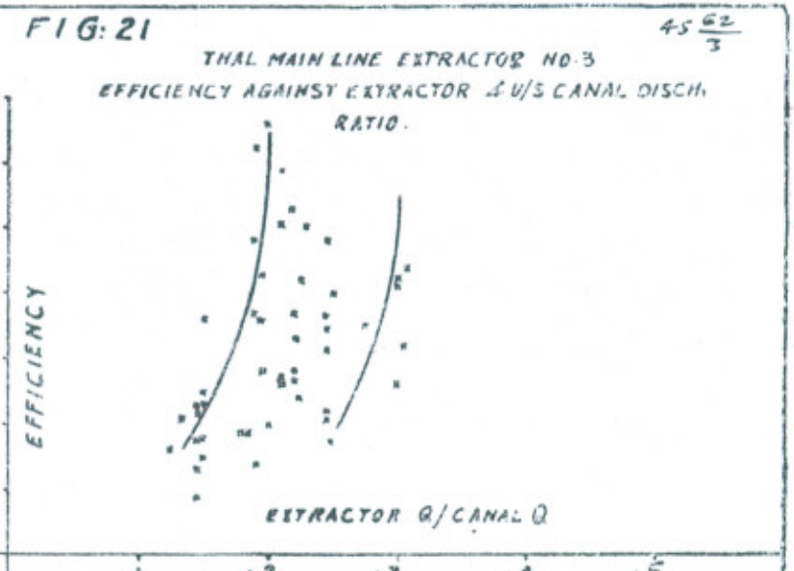
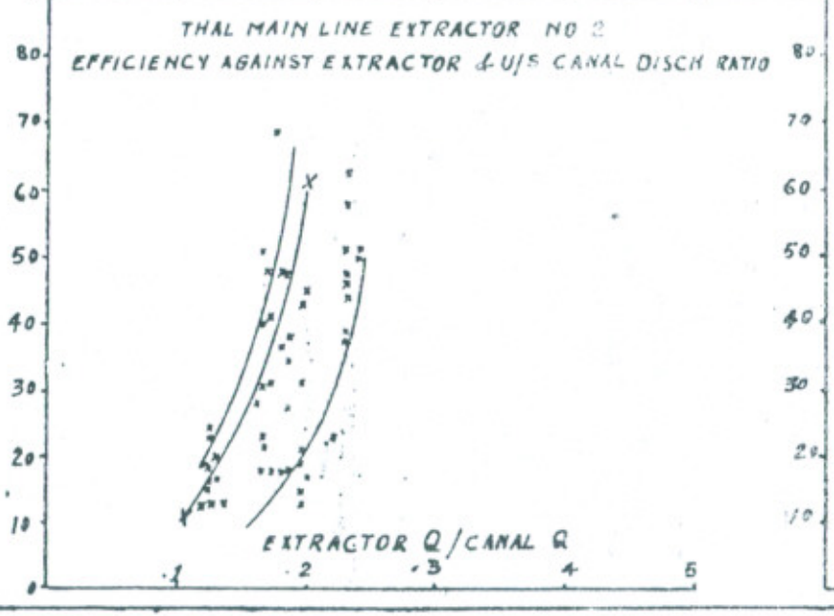


FIG: 21

45 62/3


THAL MAIN LINE EXTRACTOR NO.1
EFFICIENCY VERSES EXTRACTOR & U/S CANAL DISCH. RATIO.
EFFICIENCY
EXTRACTOR Q/ CANAL Q
80
70
60
50
40
30
20
10
0
·1
·2
·3
·4
·5


THAL MAIN LINE EXTRACTOR NO·3
EFFICIENCY AGAINST EXTRACTOR & U/S CANAL DISCH. RATIO.
EFFICIENCY
EXTRACTOR Q/CANAL Q
70
60
50
40
30
20
10
·1
·2
·3
·4
·5


THAL MAIN LINE EXTRACTOR NO 2
EFFICIENCY AGAINST EXTRACTOR & U/S CANAL DISCH RATIO
EXTRACTOR Q/CANAL Q
80
70
60
50
40
30
20
10
0
·1
·2
·3
4
5

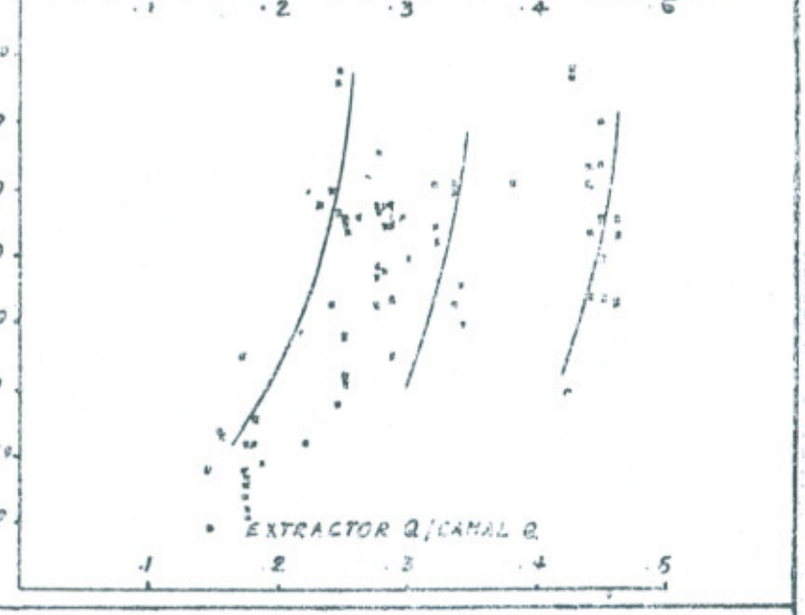
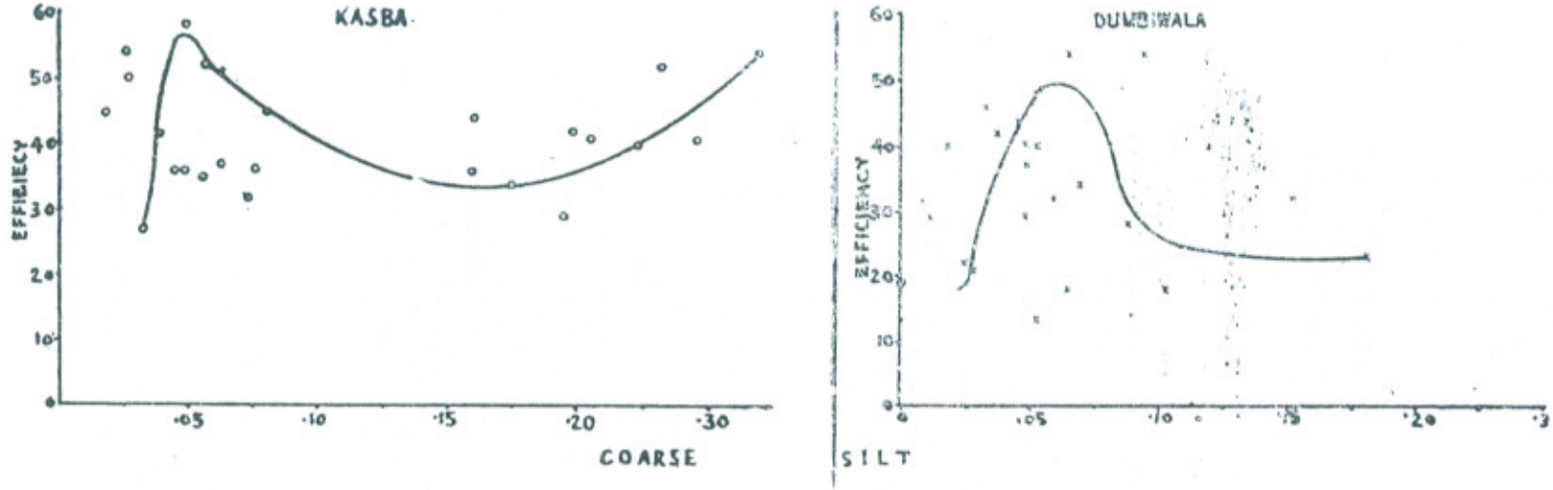

EXTRACTOR Q/CANAL Q
80
70
60
50
40
30
20
10
·1
2
3
4
5

FIG:- 2.2

45 62/1

EFFICIENCY AGAINST COARSE SILT INTENSITY



EFFICIENCY AGAINST EXTRACTOR & U/S CANAL DISCHARGE RATIO

