



**GOVERNMENT OF TAMIL NADU
WATER RESOURCES ORGANISATION
PUBLIC WORKS DEPARTMENT**

**TAMILNADU IRRIGATED AGRICULTURE MODERNISATION
AND WATER RESOURCES MANAGEMENT PROJECT**

**ADDITIONAL PROPOSALS
UTILISING THE SAVINGS - PHASE - I
TN - IAMWARM PROJECT**

**VARAHANADHI SUB BASIN
DETAILED PROJECT REPORT**

Amount :- Rs. 522.20 Lakhs

**Lower Pennaiyar Basin Division, Villupuram.
Pennaiyar Basin Circle, Thiruvannamalai.
Chennai Region, Chennai.**

REPORT ACCOMPANY THE DETAILED PROJECT REPORT FOR THE WORK OF REHABILITATION OF THE LEFT OUT TANKS IN VARAHANADHI SUB BASIN

GENERAL

The Government has accorded the administrative sanction for Rs.399.23 Crores Vide in G.O.No. 43/Public works (WR1) Department dated: 26.02.2007 for implementing IAMWARM Project in 9 sub basins under Phase I. The Varahanadhi Sub Basin is one among the above 9 sub basins for which an amount of 23.8752 crores has been provided for rehabilitation works comprising twelve packages. Accordingly the following works were carried out in this sub basin.

REHABILITATION TAKEN UP:-

This sub basin consists of 256 tanks and 42 Anicuts . Out of the 256 tanks and 42 Anicuts rehabilitation works were carried out in 236 tanks and 38 Anicuts.20 tanks does not require any improvement at the time selection of tank for rehabilitation, since they were rehabilitated through some other schemes or not required at that time`

Rehabilitation works carried out in the sanctioned project are as follows.

- Strengthening the tank bund by using Machineries.
- Desilting the supply channels by earthwork excavation using Machineries
- Reconstruction of Collapsed weirs
- Reconstruction of Collapsed Sluices
- Dsilting of Anicut Supply Channel
- Retaining walls and Model Section in selective places of the tanks
- Providing S.G. Shutter / Plug arrangements to Sluices, Head sluices, Scour vents etc.,
- Fixing Boundary Stones in the tank bund and water spread area

Under the IAMWARM projet, the irrigation facilities like system tanks, Non – System tanks and Anicut of the basin under the control of Water Resources Organisation P.W.D., are propose to modernized. The command area to be covered by this project is 43154.25 Ha. The registered ayacut is 25274.96 Ha.

REHABILITATION ALREADY TAKEN UPIN PHASE I

The following works were carried out in this basin under Phase I of IAMWARM project.

This sub basin consists of 2566 tanks and 42 Anicuts, Out of 256 tanks the following components of works were carried out under Phase I of IAMWARM project. Strengthening of tank bunds in 215 tanks out of 256 tank bunds, Repairs / Reconstruction of 225 sluices out of 463 sluices, Repairs to weirs in 68 nos out of 287 nos and Improvements to supply channel 290 nos out of 310 nos. Out of 42 Anicuts, the following components of works were carried out under Phase I of IAMWARM project in 38 Anicuts, viz Repairs to 36 head sluices out of 40 nos, Repairs to 37 Anicuts out of 42 anicuts, Improvements to 21 nos if flood banks out of 42 nos, Improvements to supply channel 37 nos out of 40 nos, Repairs to shutters 36 nos out of 40 nos.

REHABILITATION NOW PROPOSED (LEFT OUT TANKS / ANICUT)

Out of the 20nos of left out tanks and 4 nos of Anicut. 14 nos of tanks and 1 Anicut have been proposed for rehabilitation.

The following components of works in the left out Tanks / Anicuts which were not covered in the previous packages viz, Strengthening of tank bunds in 13 tanks out of 41 tank bunds, Repairs / Reconstruction of 19 sluices out of 238 sluices, Repairs to weirs in 15 nos out of 219 nos, Improvements to supply channel 13 nos out of 20 nos, Improvements to 18 nos of field channels out of 463 nos and in Anicuts repairs to 1 sluice out of 4 nos, repairs to anicuts 1 no out of 5 nos, Repairs to 1 flood bank out of 11 flood bank, Improvements to supply channel out of 1 supply channel out of 3 nos, repairs to shutter 1 no out of 4 nos are contemplated in this estimate. Further during the flood in the year 2005, 2008, and 2010, the common bund between the River and channel at Rajampuliyur Anicut got breached in many places and become weak. Hence , the common bund between the river and channel needs to be standardized for a length of 2800m has been proposed now.

Based on the requirement this estimate is prepared to rehabilitate the leftout tanks and 1 anicut by using the overall savings amount available and based on the agreed actions in the wrap up meeting chaired by the Finance Secretary on 17.09.2012, which was communicated in the Engineer in Chief WRD Lr. No. Tech cell/ 57252 / WB Mission/ 2009 Dated 05.10.2012 and also the World Bank Implementation support mission draft aide memoir.

PROJECT PROPOSALS:-

1. Raising and strengthening the Tank Bund.
2. Reconstruction/ Reapirs to sluices.
3. Repairs to weirs.
4. Desilting supply channels.
5. Lining the Field Channels.
6. Repairs to Anicut and Strengthening the common flood bank

The following packages are proposed in this proposal

VARAHANDHI SUB BASIN LEFT OUT TANKS IN PHASE –I

Sl.No	Name of Work	Estimate Amount (in Lakhs)
1.	Rehabilitation and modernisation of left out Tanks, Supply Chanelns and Anicut covered under varahanadhi sub basin in Melmalaiyanur, gingee and Vallam blocks of Gingee Taluk in Villupuram District. Package No.1/ IAMWARM / VNSB / WRD / Left out works / 2012 - 13	418.20
2.	Rehabilitation and Modernisation of left out Tanks and supply Channels covered under Varahanadhi Sub Basin in Kanai, Koliyanur and muhaiyur blocks in Villupuram and Thirukoilur Taluk of villupuram district. Package No.2 / IAMWARM / VNSB / WRD / Left out works / 2012-13	104.00
	Total	522.20

Assistant Engineer, WRD,
Irrigation Section, Vidur.

Assistant Executive Engineer, WRD,
Lower Pennaiyar Basin Sub Division,
Tindivanam.

Nodel Officer, WRD.,
Executive Engineer, WRD,
Lower Pennaiyar Basin Division,
Villupuram.

Superintending Engineer, WRD,
Pennaiyar Basin Circle,
Thiruvannamalai.

Chief Engineer, WRD,
Chennai Region, Chennai.

STATEMENT - I
Rehabilitation of left out works in VARAHANADHI SUB BASIN
Abstract showing the details of Rehabilitation Works proposed

Sl.No.	Description	Tanks	Anicut	Supply channel Nos.	Nos
1	Available Infrastructure in the sub basin	256	42	310	
2	Rehabilitation works taken up under IAMWARM Project	236	38	290	
	a) Infrastructure in which all the components are in good condition and does not require rehabilitation now	236	38	290	
	b) Infrastructures taken up under IAMWARM but certain components not taken up then, but require rehabilitation now.	nil	nil	nil	
3	Tanks not taken up for rehabilitation since 2005 under any other schemes.	20	4	20	
	a) Infrastructure in which all the components are in good condition and does not require rehabilitation now	6	3	Nil	
	b) Infrastructures in which certain components not taken up since 2005 but require rehabilitation now.	14	1	13	
4.	Total No. of infrastructures requiring rehabilitation now.	14	1	13 (44.50Km)	

- 1.Certified that the works are proposed in the selected IAMWARM Sub basin area
- 2.Certified that the Panchayat Union tanks are not considered in this Project.
- 3.Certified that for item 2b, the components of the infrastructure now proposed were not taken up under IAMWARM Project
- 4.For Items No.3 - Certified that the works are not executed under various scheme(Viz., NABARD, Part II Schemes, etc.) and IAMWARM since 2005.

Assistant Engineer, WRD,
Irrigation Section, Vidur.

Assistant Executive Engineer, WRD,
Lower Pennaiyar Basin Sub Division,
Tindivanam.

Nodel Officer, WRD.,
Executive Engineer, WRD,
Lower Pennaiyar Basin Division,
Villupuram.

Superintending Engineer, WRD,
Pennaiyar Basin Circle,
Thiruvannamalai.

Chief Engineer, WRD,
Chennai Region, Chennai.

A. WRO COST TABLE

Sl. No	Description of Works	Quantity	Amount in Lakhs	Remarks
I. Supply Channel				
1	Desilting of Supply Channels to its Standard providing with bed bars	44500 m	51.37	
I. Tank				
1.	Raising and Strengthening the tank bund	17274 m	129.63	
2.	Reconstruction of Sluice	17 Nos	104.78	
3.	Repairs to Sluice	2 Nos	10.67	
4.	Repairs to Weirs	15 Nos	108.28	
5.	Flow Measuring Device	22 Nos	2.86	
6.	Lining of of Irrigation Channel	18 Nos	25.65	
II. Anicut and Main Canal				
1	Rajampuliyur Anicut	1 No	73.51	
Total Civil Cost			506.75	
LS Provision				
1	Petty supervision, contingencies, advertisement and photographic charges etc., @ 2.5 %	-	13.93	
2	Labour welfare fund @ 0.3 %	-	1.52	
Sub Total			15.45	
TOTAL			522.20	

Assistant Engineer, WRD,
Irrigation Section, Vidur.

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Lower Pennaiyar Basin Sub Division,
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Executive Engineer, WRD,
Lower Pennaiyar Basin Division,
Villupuram.

Superintending Engineer, WRD,
Pennaiyar Basin Circle,
Thiruvannamalai.

Chief Engineer, WRD,
Chennai Region, Chennai.

STATEMENT - II A

REHABILITATION OF LEFT OUT TANKS IN VARAHANADHI SUB BASIN UNDER IAMWARM PROJECT

SUB BASIN : VARAHANADHI SUB BASIN

Sl.No.	Name of Tank	Tank Bund Improvements		Repairs to Sluice		Reconstruction of Sluice		Repairs to Weir		Reconstruction of Weir		Lining of field Channel		Flow Measuring Device		Total
		Length of Bund	Total Amount	No.	Amt	No.	Amount	No.	Amt	No.	Amount	No.	Amount	N o	Amount	
Package No:- 01/ IAMWARM / VNSB / WRD / LEFTOUT WORKS / 2012-13																
1	Sirukadambur Tank	1400	9.70			2	12.70	1	5.74							28.14
2	Melvailamur Tank	1012	8.94			1	6.71	1	6.83			1	1.35	3	0.36	24.19
3	Edhapattul Tank	1030	8.83			1	6.82	1	1.28			1	1.66	3	0.36	18.95
4	Melmalaiyanur Tank	1637	11.18				0	2	12.69			1	1.15	3	0.35	25.37
5	Nochalur Tank	1100	7.36	2	10.67		0	1	17.23			2	2.85	3	0.35	38.46
6	Valathi Tank	995	8.34			1	6.55	2	12.87			2	2.75	1	0.19	30.70
7	Konai Tank	1240	8.54			1	6.74		0			2	2.77			18.05
8	Mazhavanthangal Tank		0			1	10.49	1	5.73				0			16.22
9	Karai peria eri	900	8.57			1	6.33	1	7.10			2	2.29	1	0.19	24.48
10	Mel olakkur Peria Eri	1340	7.89			2	13.31	1	11.77			2	2.78	2	0.26	36.01
11	Kilvayalamur Tank	2300	14.20			2	13.13	1	6.71				0			34.04
	Total	12954	93.55	2	10.67	12	82.78	12	87.95			13	17.60	16	2.06	294.61

STATEMENT - II A

REHABILITATION OF LEFT OUT TANKS IN VARAHANADHI SUB BASIN UNDER IAMWARM PROJECT

SUB BASIN : VARAHANADHI SUB BASIN

Sl.No.	Name of Tank	Tank Bund Improvements		Repairs to Sluice		Reconstruction of Sluice		Repairs to Weir		Reconstruction of Weir		Lining of Field Channel		Flow Measuring Device		Total
		Length of Bund	Total Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	
	Package No:- 02/ IAMWARM / VNSB / WRD / LEFTOUT WORKS / 2012-13															
1	Konur Chitheri Tank	1320	10.79			2	8.22	1	4.70			2	3.57	2	0.30	27.58
2	Kandampakkam Tank	2100	17.31			1	4.78	1	7.94			1	1.79	2	0.20	32.02
3	Madavilagam Tank	900	7.98			2	9.00	1	7.69			2	2.69	2	0.30	27.66
	Total	4320	36.08			5	22.00	3	20.33			5	8.05	6	0.80	87.26

STATEMENT - II B

REHABILITATION OF IRRIGATION CHANNELS

SUB BASIN : VARAHANADHI SUB BASIN

Sl. No.	Name of Tanks	Desilting Irrigation Channel		Lining of Irrigation Channel		Repairs to Drops, Syphon, Cistern		Repairs to Culvert aqueduct etc.,		Shutter Renewal		Total
		Length in M	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	
	Package No:- 01/ IAMWARM / VNSB / WRD / LEFTOUT WORKS / 2012-13											
1	Sirukadambur Tank	2500	2.31									2.31
2	Melvailamur Tank	3000	2.34									2.34
3	Edhapattul Tank	2000	1.94									1.94
4	Melmalaiyanur Tank	10000	17.35									17.35
5	Nochalur Tank	4000	3.06									3.06
6	Valathi Tank	4000	2.98									2.98
7	Konai Tank	2000	1.88									1.88
8	Mazhavanthangal Tank											
9	Karai peria eri											
10	Mel olakkur Peria Eri	3000	3.31									3.31
11	Kilvayalamur Tank	1500	2.29									2.29
	Total	32000	37.46									37.46

STATEMENT - II B

REHABILITATION OF IRRIGATION CHANNELS

SUB BASIN : VARAHANADHI SUB BASIN

Sl. No.	Name of Tanks	Desilting Irrigation Channel		Lining of Irrigation Channel		Repairs to Drops, Syphon, Cistern		Repairs to Culvert aqueduct etc.,		Shutter Renewal		Total
		Length in M	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	
	Package No:- 02/ IAMWARM / VNSB / WRD / LEFTOUT WORKS / 2012-13											
1	Konur chitheri Tank	6000	5.67									5.67
2	Kandampakkam	3000	2.91									2.91
3	Madavilagam Tank	3500	5.33									5.33
	Total	12500	13.91									13.91

STATEMENT - II C

REHABILITATION OF ANICUTS AND SUPPLY CHANNEL

SUB BASIN : VARAHANADHI SUB BASIN

Sl. No.	Name of Anicut	Reconstruc - tion of Anicut		Repairs to Anicut		Reconstruction of Head Sluice		Desilting Supply Channel		Costruction of Culvert		Repairs to flood escape		Strengthening the common flood bank		Total	
		No	Amt	No	Amt	No	Amt	Length	Amt	No	Amt	No	Amt	Length	Amt		
	Package No:- 01/ IAMWARM / VNSB / WRD / LEFTOUT WORKS / 2012-13																
1	Rajampuliyur Anicut			1	21.37	1	1.36	2800	7.51			1	15.42	3100	27.85	73.51	

Name of Work :- Rehabilitation and modernisation of left out Tanks and supply Channels covered under varahanadhi sub basin in Melmalaiyanur, Gingee and Vallam block s of Gingee Taluk in Villupuram District.

Package No:- 1/ IAMWARM / VNSB / WRD / LEFTOUT WORKS / 2012-13

ABSTRACT

SI.No.	Name of Tank	Total Amount in Lakhs
1	Sirukadambur Tank	30.45
2	Melvailamur Tank	26.53
3	Edhapattul Tank	20.89
4	Melmalaiyanur Tank	42.72
5	Nochalur Tank	41.52
6	Valathi Tank	33.68
7	Konai Tank	19.93
8	Mazhavanthangal Tank	16.22
9	Karai peria eri	24.48
10	Mel olakkur Peria Eri	39.32
11	Kilvayalamur Tank	36.33
	Total Amount for Tank Civil Work	332.07
1	Rajampuliyur Anicut	73.51
	Petty supervision, contingencies, advertisement and photographic charges etc., @ 2.5 %	11.40
	Labour welfare fund @ 0.3 %	1.22
	TOTAL	418.20

Name of Work :- Rehabilitation and modernisation of left out Tanks and supply Channels covered under varahanadhi sub basin in Melmalaiyanur.Vallam and Gingee blocks of Gingee Taluk in Villupuram District.

Package No.02/ IAMWARM / VNSB / WRD / Left out works / 2012 - 13

ABSTRACT

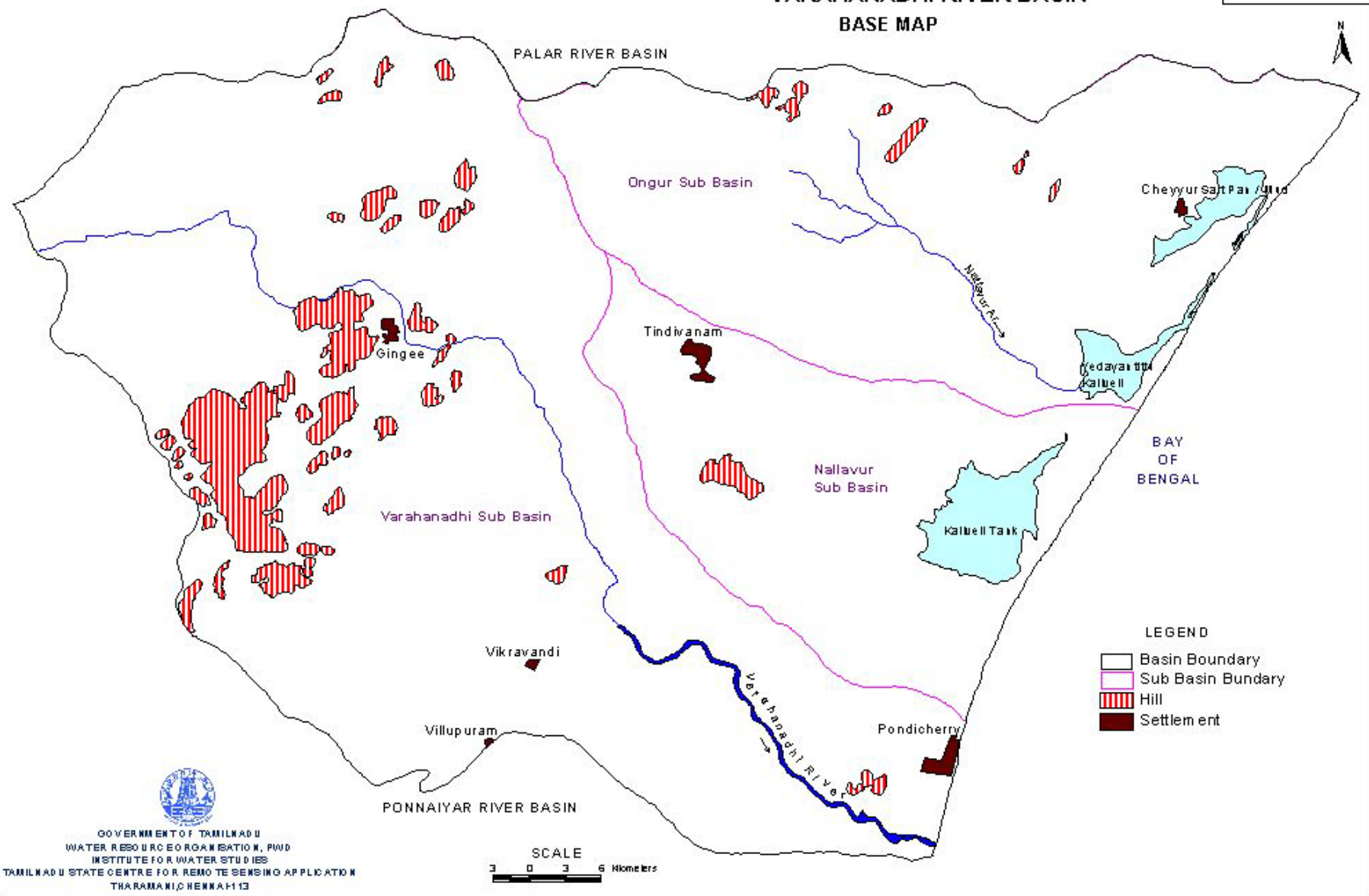
Sl.No.	Name of Tank	Amount In Lakhs
1	Konur chitheri Tank	33.25
2	Kandampakkam	34.93
3	Madavilagam Tank	32.99
	Total Civil Work	101.17
	Petty supervision, contingencies, advertisement and photographic charges etc., @ 2.5 %	2.53
	Labour welfare fund @ 0.3 %	0.30
	Total	104.00

VARAHANADHI SUB BASIN MAP

VARAHANADHI RIVER BASIN

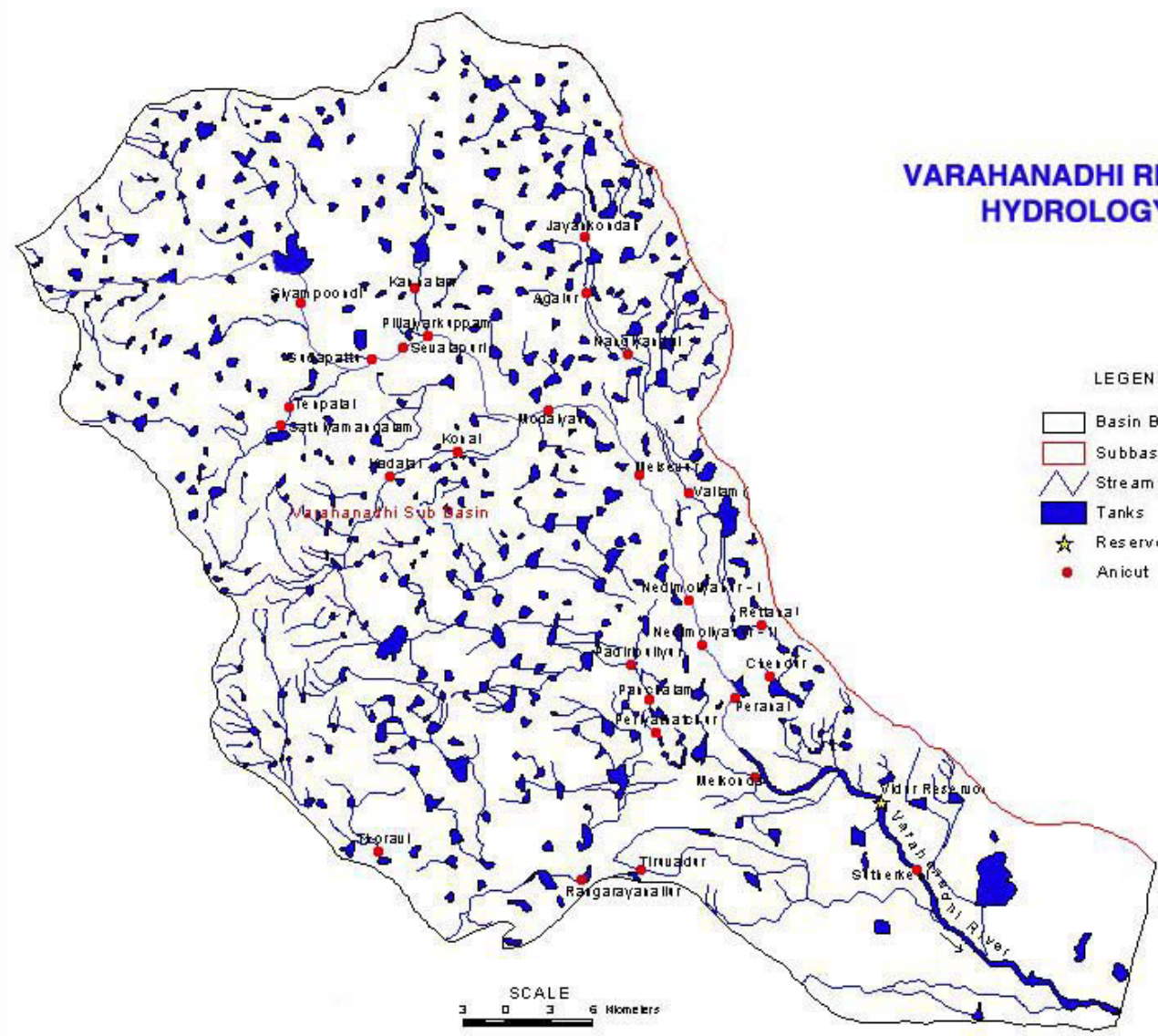
PLATE:- VAR - 02

BASE MAP









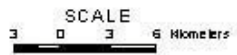


VARAHANADHI RIVER BASIN HYDROLOGY MAP



LEGEND

-  Basin Boundary
-  Subbasin Boundary
-  Stream / River
-  Tanks
-  Reservoir
-  Anicut








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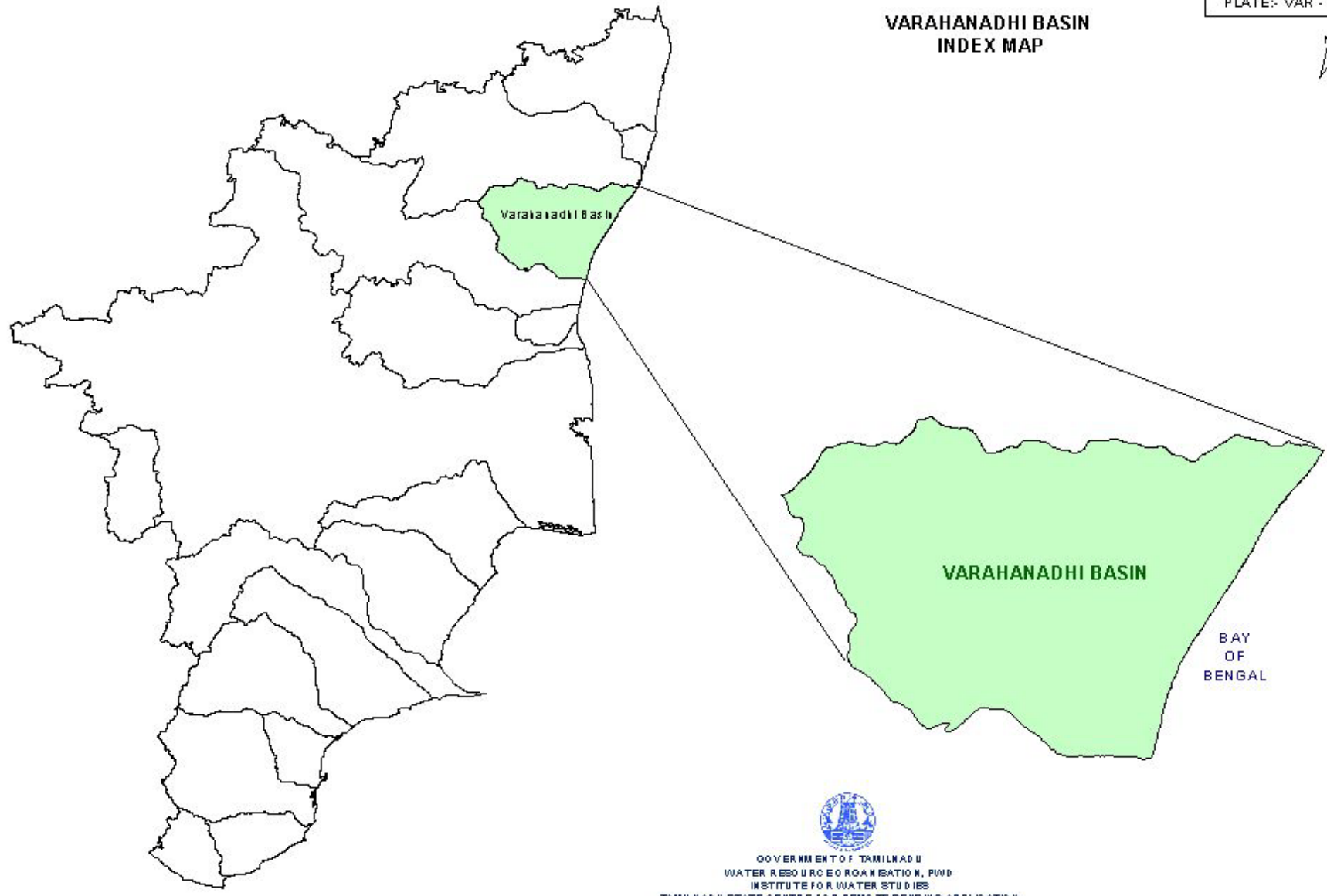
VARAHANADHI RIVER BASIN ADMINISTRATIVE BOUNDARY MAP

LEGEND

-  Basin Boundary
-  Sub Basin Boundary
-  Block Boundary
-  Pondichery
-  Settlement



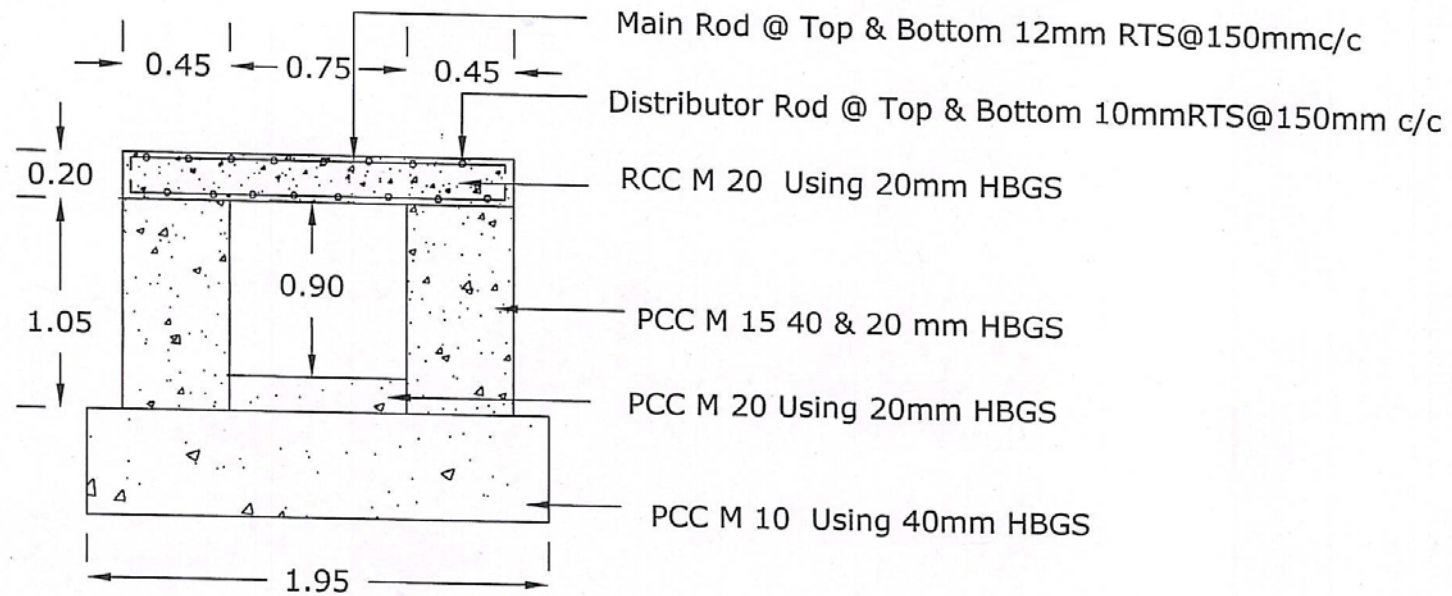
**VARAHANADHI BASIN
INDEX MAP**



GOVERNMENT OF TAMILNADU
WATER RESOURCES ORGANIZATION, PWD
INSTITUTE FOR WATER STUDIES
TAMILNADU STATE CENTRE FOR REMOTE SENSING APPLICATION
THIRAMANI CHENNAI-113



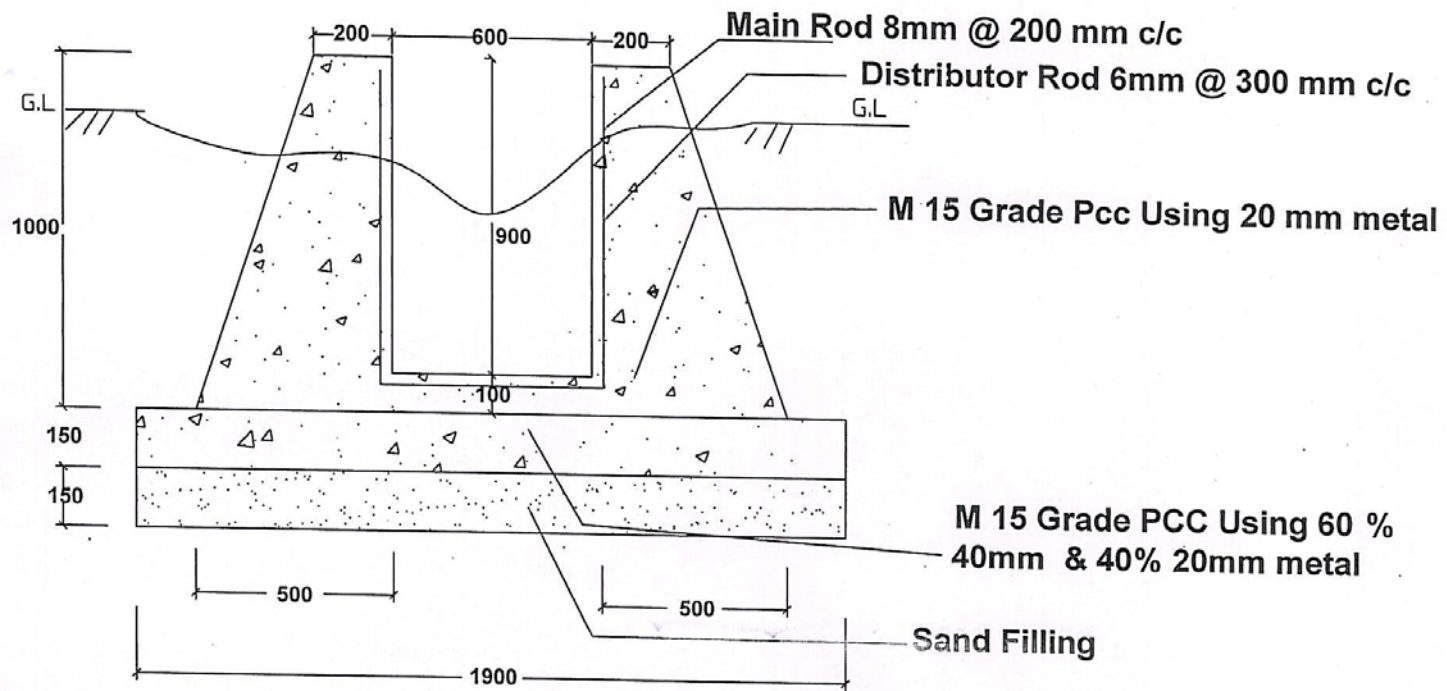
2.3 DESIGN AND DRAWING



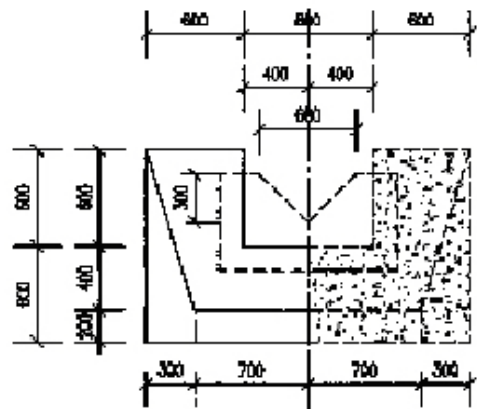
DETAILS FOR BARREL COVER SLAB OF SLUICE

All Dimensions are in m

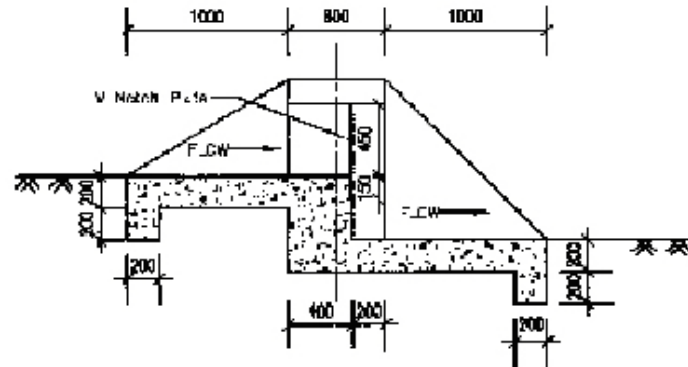
TYPICAL CROSS SECTION OF LINED IRRIGATION CHANNEL



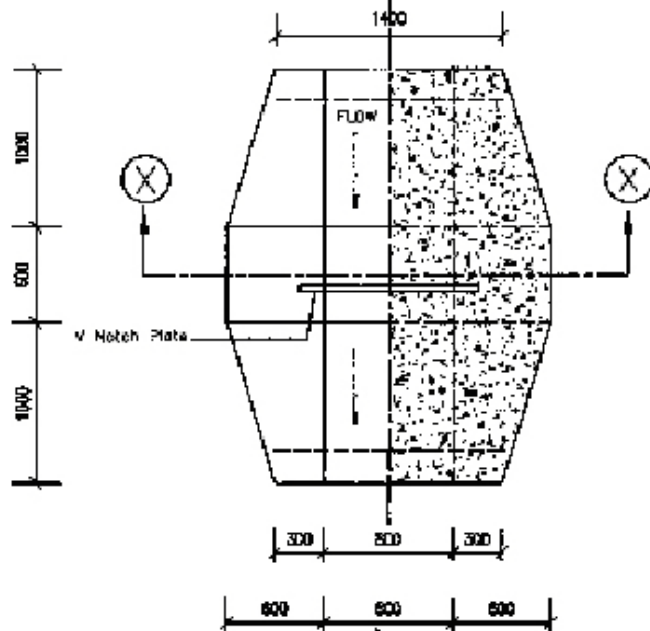
ALL DIMENSIONS ARE IN MM



HALF FRONT ELEVATION AND HALF SECTIONAL ELEVATION AT X-X



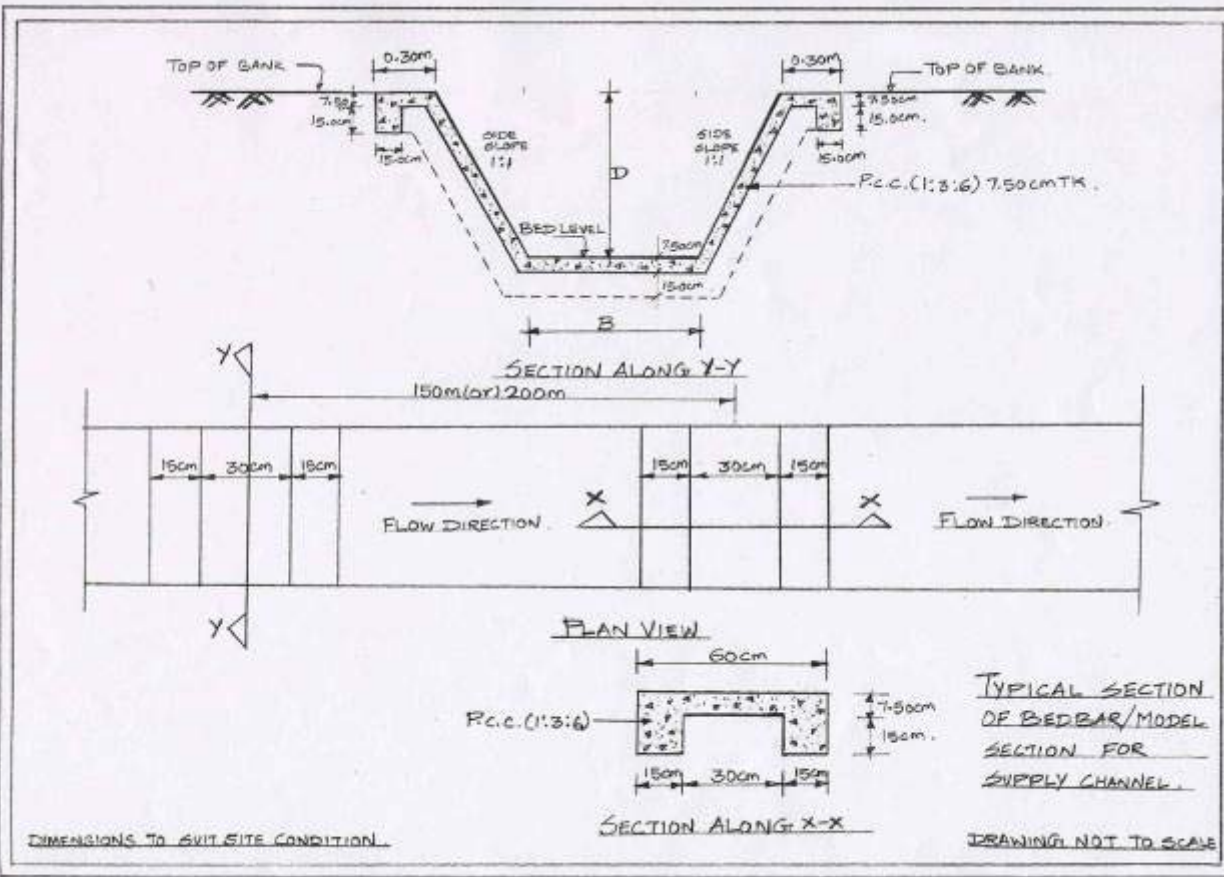
CROSS SECTION



HALF PLAN AT TOP AND HALF PLAN AT BOTTOM

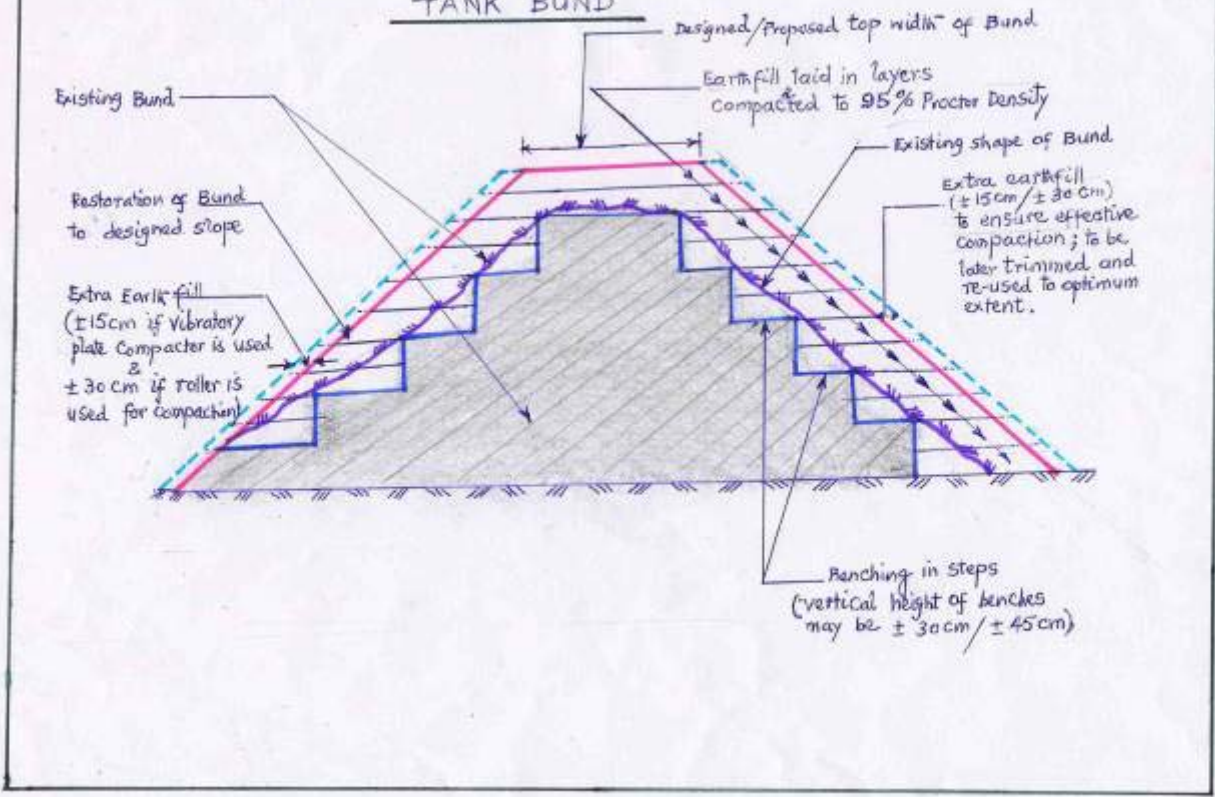
V-NOTCH - SAJIENT DETAILS (For 1 to 4 C/ε)

Cusecs	Discharge	Head over Crest in cm	V-Notch size in cm	Overall size in cm
	Lit/Sec			
1	28.30	20.50	25x25	50x65
2	56.60	27.00	30x60	50x75
3	85.00	32.00	35x70	55x80
4	113.27	36.00	42x84	60x100

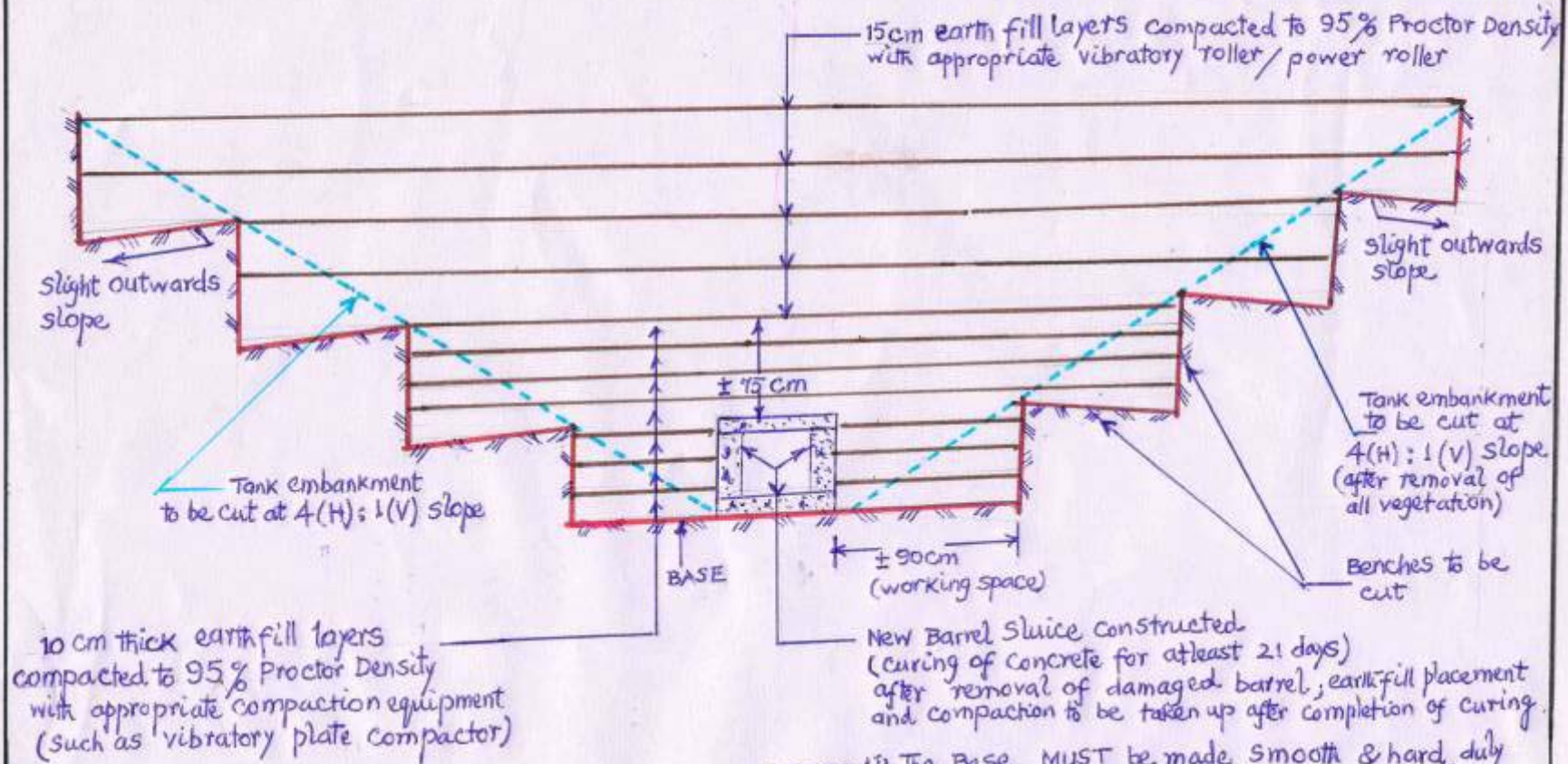


TYPICAL SKETCH

RAISING & STRENGTHENING OF TANK BUND



TYPICAL SKETCH



RECONSTRUCTION OF SLUICES

- NOTES**
- (i) The Base MUST be made smooth & hard, duly compacted with compactors/pneumatic tampers.
 - (ii) Earth fill compaction adjoining the Barrel and Benches should be compacted by mechanical/pneumatic tampers to ensure effective compaction.
 - (iii) Earth obtained from "benching" be reused (after removal of clods bigger than 7.5 cm, vegetation etc) in earth fill layers.

