



**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 - III  
TN - IAMWARM PROJECT**

**NALLAVUR SUB BASIN  
DETAILED PROJECT REPORT**

**Amount :- Rs.590.40 Lakhs**

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

## **REPORT TO ACCOMPANY THE DETAILED PROJECT REPORT FOR THE WORK OF REHABILITATION OF THE LEFT OUT TANK COMPONENTS OF NALLAVUR SUB BASIN**

### **GENERAL**

The Government has accorded the administrative sanction for Rs.1730.214 Lakhs Vide in G.O.Ms.No.282 PW(WR2) Dept Dated 01-10-2010 for rehabilitation works comprising Five packages. Accordingly the following works were carried out in this sub basin.

### **REHABILITATION TAKEN UP:-**

This sub basin consists of 94 tanks and 4 Anicuts . Out of the 94 tanks and 4 Anicuts , rehabilitation works were carried out in 75 tanks and 4 Anicuts. Balance 19 tanks were not taken up 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
- Lining of Irrigation Main Canal
- 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

### **LEFT OUT TANKS:-**

Out of the left out 19 tanks , 15 tanks are required rehabilitation works such as reconstruction and repairs to sluices, weirs,desilting of supply channels and strengthening the bunds.

Based on the requirement this estimate is prepared to rehabilitate the 15 left out tanks, 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 Letter No. Tech cell / 57252/WB Mission/ 2009/Dated: 05.10.2012 and also the World Bank Implementation support mission draft aide memoir.

Out of 94 tanks the rehabilitation works for the 75 tanks have been already taken and now it is proposed to rehabilitate 15 tanks.

Out of 187 Sluices, 99 sluices have been repaired / reconstructed under Phase –III and now it is proposed to reconstruct 27 sluices and repair 2 sluices.

Out of 121 weirs, repairs have been already made to 88 weir and now it is proposed to repair 15 weirs in this proposal.

Out of 75 supply channels, 57 supply channels have been already rehabilitate and now it is proposed to take 12 supply channels for rehabilitation in this proposals.

PROJECT PROPOSALS:-

1. Standardisation of Tank Bund - 15 Nos
2. Reconstruction of sluices – 27 Nos
3. Repairs to sluices – 2 Nos
4. Desilting supply channels – 12 Nos (12000m)
5. Irrigation channels lining – 27 Nos
6. Repairs to weirs – 16 Nos

The following packages are proposed in this proposal

**NALLAVUR SUB BASIN LEFT OUT COMPONENT IN PHASE –I**

Sl.No	Name of Work	Estimate Amount (in Lakhs)
1.	Rehabilitation and Modernisation of left out Tanks and Supply Channels under Nallavur sub basin in mailam, Marakkanam and Vanur block in Vanur and Tindivanam Taluks of Villupuram District Package No.01 / IAMWARM / WRD/ NLR/ LEFTOUT WORKS/ 2012-13	<b>258.80</b>
2.	Rehabilitation and Modernisation of left out Tanks under Nallavur sub basin in Marakkanam and Vanur block in Vanur and Tindivanam Taluks of Villupuram District Package No.02 / IAMWARM / WRD/ NLR/ LEFTOUT WORKS/ 2012-13	<b>331.60</b>
		<b>590.40</b>

Assistant Engineer, WRD,  
Irrigation Section, Vanur.

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 NALLAVUR 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	94	4	125	
2	Rehabilitation works taken up under IAMWARM Project	75	4	110	
	a) Infrastructure in which all the components are in good condition and does not require rehabilitation now	75	4	110	
	b) Infrastructures taken up under IAMWARM but certain components not taken up then, but require rehabilitation now.	--	--		
3	Tanks not taken up for rehabilitation since 2005 under any other schemes.	19	Nil	12	
	a) Infrastructure in which all the components are in good condition and does not require rehabilitation now	4	Nil	--	
	b) Infrastructures in which certain components not taken up since 2005 but require rehabilitation now.	15	Nil	12	
4.	<b>Total No. of infrastructures requiring rehabilitation now.</b>	<b>15</b>	<b>NIL</b>	<b>12 (12.00 Km)</b>	

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, Vanur.

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Lower Pennaiyar Basin Sub Division,  
Tindivanam.

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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.

**A. WRO COST TABLE**

SI. No	Description of Works	Quantity	Amount in Lakhs
<b>I. Supply Channel</b>			
1	Desilting of Supply Channels to its Standard providing with bed bars	12000 m	12.32
<b>I. Tank</b>			
1	Standardisation of the tank bund	30065 m	194.47
2	Reconstruction of Sluice	27 Nos	175.50
3	Repairs to Weirs	16Nos.	110.14
4	Repairs to Sluice	2 Nos.	9.22
5	Flow Measuring Device	27 Nos.	3.18
7	Lining of of Irrigation Channel	1350 m	69.45
	<b>Total Civil Cost</b>		<b>574.34</b>
9	Petty supervision, contingencies, advertisement and photographic charges etc., @ 2.5 %	-	14.35
10	Labour welfare fund @ 0.3 %	-	1.71
	<b>TOTAL</b>		<b>590.40</b>

Assistant Engineer, WRD,  
Irrigation Section, Vanur.

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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 - II A**

**REHABILITATION OF LEFT OUT COMPONENTS IN TANKS IN SUB BASIN OF IAMWARM PROJECT  
REHABILITATION OF TANK WORKS**

**SUB BASIN : NALLAVUR SUB BASIN**

Sl.No.	Name of Tank	Tank Bund Improvements		Repairs to Sluice		Reconstruction of Sluice		Repairs to Weir		Reconstruction of Weir		Lining Field Channel		Flow Measuring Device		Total
		Length of Bund	Total Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	
<b>Package No:- 01/ IAMWARM / NLR / WRO / LPBD /NCB</b>																
1	Vempoondi Tank	1400	10.63			2	12.59	2	2.82			2	5.62	2	0.26	31.92
2	Gidangal Tank	3300	20.13			3	20.29	2	39.91			3	10.94	3	0.44	91.71
3	Kallakolathur Tank	2200	11.61			1	6.38	1	7.88			3	8.31	3	0.35	34.53
4	Vengai Tank	1900	13.26													13.26
5	Thenkodipakkam Tank	2150	15.45			1	6.27	2	15.48			2	5.49	2	0.25	42.94
6	Perumpakkam Tank	1340	10.05	2	9.22							2	5.55	2	0.26	25.08
		<b>12290</b>	<b>81.13</b>	<b>2</b>	<b>9.22</b>	<b>7</b>	<b>45.53</b>	<b>7</b>	<b>66.09</b>			<b>12</b>	<b>35.91</b>	<b>12</b>	<b>1.56</b>	<b>239.44</b>

**STATEMENT - II A**

**REHABILITATION OF LEFT OUT COMPONENTS IN TANKS IN SUB BASIN OF IAMWARM PROJECT  
REHABILITATION OF TANK WORKS**

**SUB BASIN : NALLAVUR SUB BASIN**

Sl.No.	Name of Tank	Tank Bund Improvements		Repairs to Sluice		Reconstruction of Sluice		Repairs to Weir		Reconstruction of Weir		Lining Field Channel		Flow Measuring Device		Total
		Length of Bund	Total Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	
<b>Package No:- 02/ IAMWARM / NLR / WRO / LPBD /NCB</b>																
1	Vittalapuram Tank	1500	10.33					1	6.98							17.31
2	Elavalapakkam Tank	1350	9.50			3	18.85	1	6.06			3	5.49	3	0.25	40.15
3	Thenagaram Tank	1140	10.48			3	19.12	1	1.84			2	5.59	2	0.26	37.29
4	Thailapuram Tank	2400	13.79			2	12.67	1	2.48			2	5.59	2	0.26	34.79
5	Vilvanatham Tank	2100	12.39			2	12.71	1	6.60			1	2.86	1	0.16	34.72
6	Kodur Tank	3360	21.43			2	14.14	1	2.71				0		0	38.28
7	Pudukuppam Tank	2100	13.40			4	26.92	2	16.30			3	5.57	3	0.25	62.44
8	Kiliyanur Periya Eri	2100	12.22			3	19.30	1	1.08			3	5.57	3	0.25	38.42
9	Ulagapuram Nagal Eri	1725	9.80			1	6.32					1	2.87	1	0.19	19.18
		<b>17775</b>	<b>113.34</b>			<b>20</b>	<b>130.03</b>	<b>9</b>	<b>44.05</b>			<b>15</b>	<b>33.54</b>	<b>15</b>	<b>1.62</b>	<b>322.58</b>

**STATEMENT - II B**

**REHABILITATION OF IRRIGATION CHANNELS**

**SUB BASIN : NALLAVUR 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	
<b>Package No:- 01/ IAMWARM / NLR / WRO / LEFTOUT WORKS /2012-13</b>												
1	Vempoondi Tank	2000	1.96									1.96
2	Gidangal Tank	3000	2.68									2.68
3	Kallakolathur Tank	3000	2.64									2.64
4	Vengai Tank	2000	2.03									2.03
5	Thenkodipakkam Tank	1000	1.60									1.60
6	Perumpakkam Tank	1000	1.41									1.41
		<b>12000</b>	<b>12.32</b>									<b>12.32</b>



**STATEMENT - II B**

**REHABILITATION OF IRRIGATION CHANNELS**

**SUB BASIN : NALLAVUR 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	
	<b>Package No:- 02/ IAMWARM / NLR / WRO / LEFTOUT WORKS / 2012-13</b>											
	Nil											

**STATEMENT - II C**

**REHABILITATION OF ANICUTS AND SUPPLY CHANNEL**

**SUB BASIN : NALLAVUR SUB BASIN**

Sl. No.	Name of Anicut/ Supply Channel	Reconstruction of Anicut		Repairs to Anicut		Repairs to Head Sluice		Lining Canal		Supply Channel		Total
		No.	Amount	No.	Amount	No.	Amount	No.	Amount	Length in M	Amount	
		-- Nil --										

**Name of Work :-**

**Rehabilitation and Modernisation of left out Tanks and supply chanel under Nallavur Sub Basin in Mailam, Marakkanam and Vanur blocks in Vanur and Tindivanam Taluk of Villupuram District.**

**Package No.01 / IAMWARM / NLR/ WRD/ LEFT OUT /WORKS/ 2012-13.**

**ABSTRACT**

Sl.No.	Name of Tank	Total
1	Vempoondi Tank	33.88
2	Gidangal Tank	94.39
3	Kallakolathur Tank	37.17
4	Vengai Tank	15.29
5	Thenkodipakkam Tank	44.54
6	Perumpakkam Tank	26.49
	<b>Total Tank</b>	<b>251.76</b>
	Petty supervision, contingencies, advertisement and photographic charges etc., @ 2.5 %	6.29
	Labour welfare fund @ 0.3 %	0.75
		<b>258.80</b>

**Name of Work :-**

**Rehabilitation and Modernisation of left out Tanks under  
Nallavur Sub Basin in Marakkanam and Vanur blocks  
in Vanur and Tindivanam Taluk of Villupuram District.**

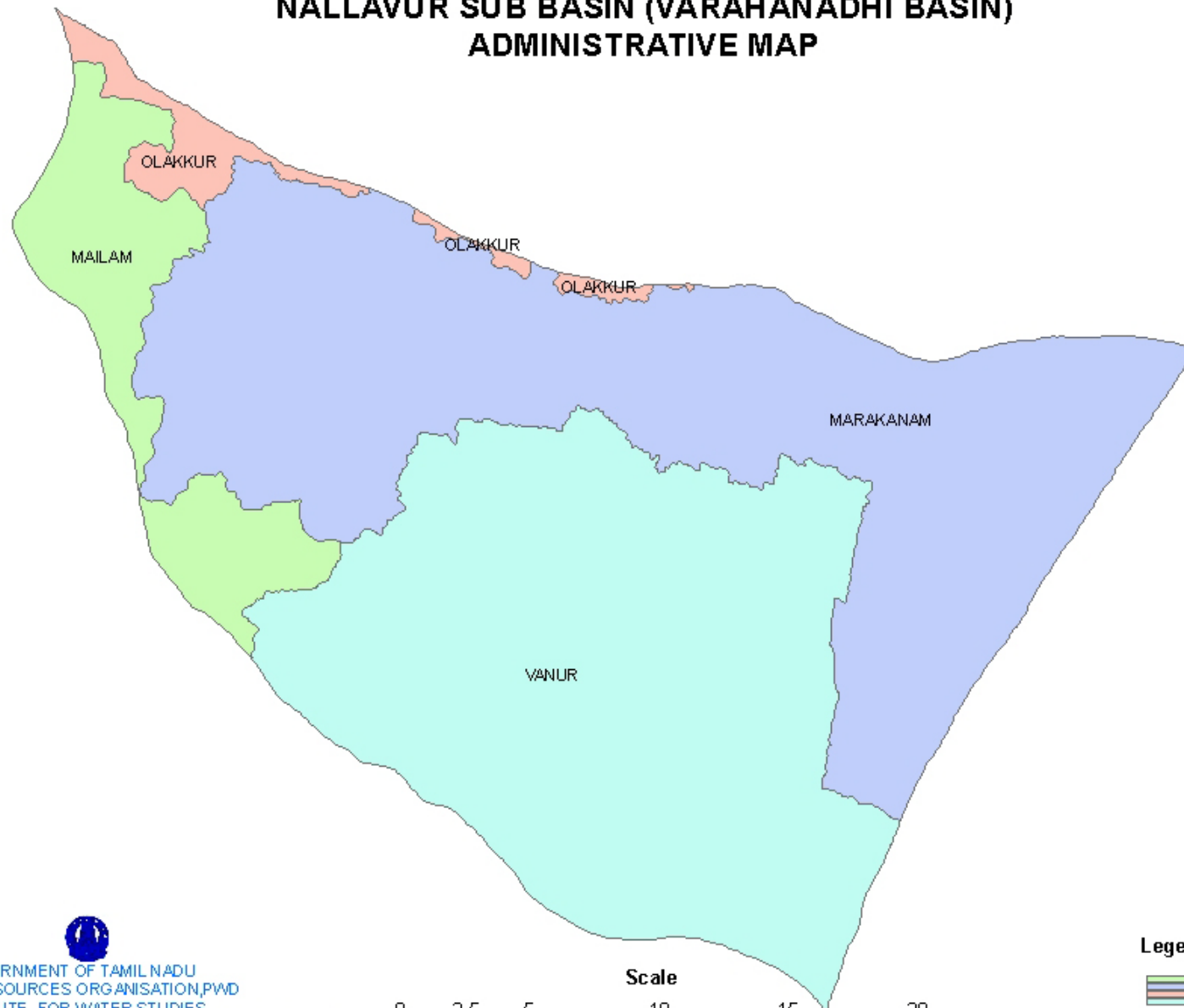
**Package No.02 / IAMWARM / WRD/ NLR/ LEFT OUT /WORKS/ 2012-13.**

**ABSTRACT**

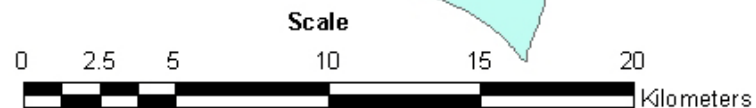
Sl.No.	Name of Tank	Total
1	Vittalapuram Tank	17.31
2	Elavalapakkam Tank	40.15
3	Thenagaram Tank	37.29
4	Thailapuram Tank	34.79
5	Vilvanatham Tank	34.72
6	Kodur Tank	38.28
7	Pudukuppam Tank	62.44
8	Kiliyanur Periya Eri	38.42
9	Ulagapuram Nagal Eri	19.19
	<b>Total Tank</b>	<b>322.58</b>
	Petty supervision, contingencies, advertisement and photographic charges etc., @ 2.5 %	<b>8.06</b>
	Labour welfare fund @ 0.3 %	<b>0.96</b>
		<b>331.60</b>

**NALLAVUR  
SUB BASIN MAP**



# NALLAVUR SUB BASIN (VARAHANADHI BASIN) ADMINISTRATIVE MAP



GOVERNMENT OF TAMIL NADU  
WATER RESOURCES ORGANISATION, PWD  
INSTITUTE FOR WATER STUDIES  
TAMIL NADU STATE CENTRE FOR REMOTE SENSING APPLICATION  
THARAMANI, CHENNAI - 113.



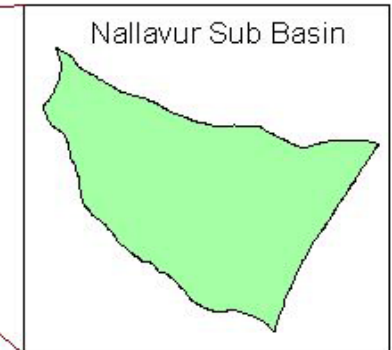
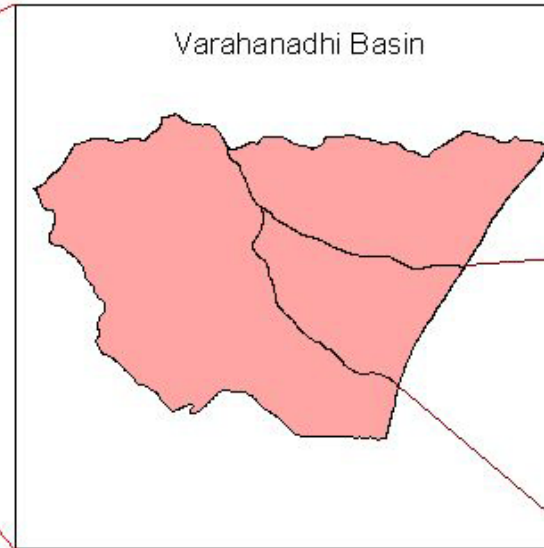
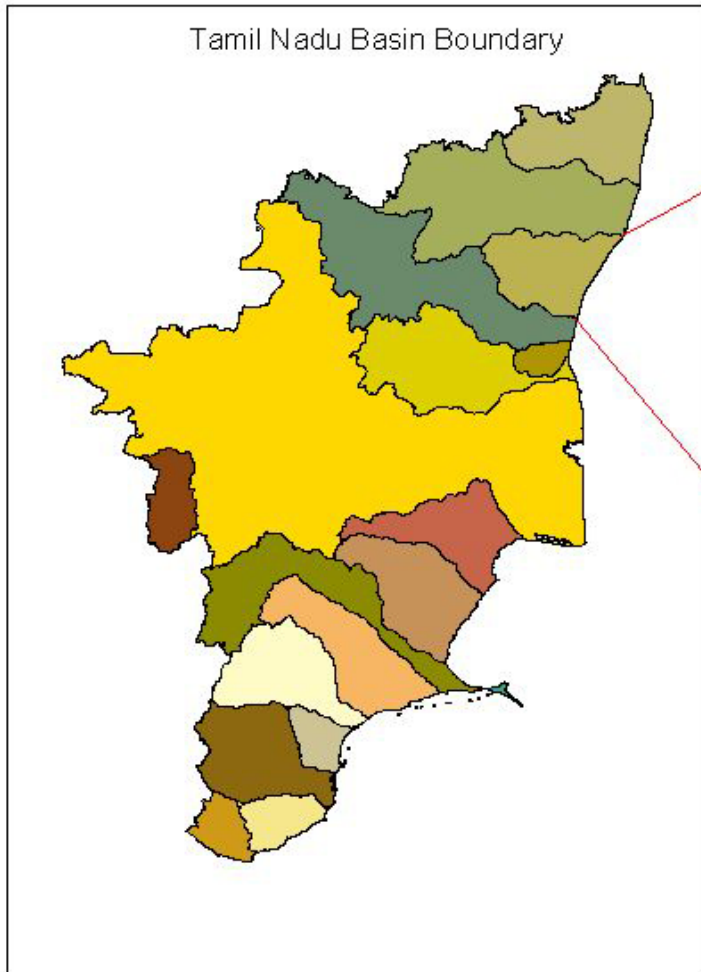
## Legend

-  Block Boundary
-  Sub Basin Boundary



**NALLAVUR SUB BASIN (VARAHANADHI BASIN)**

**INDEX MAP**



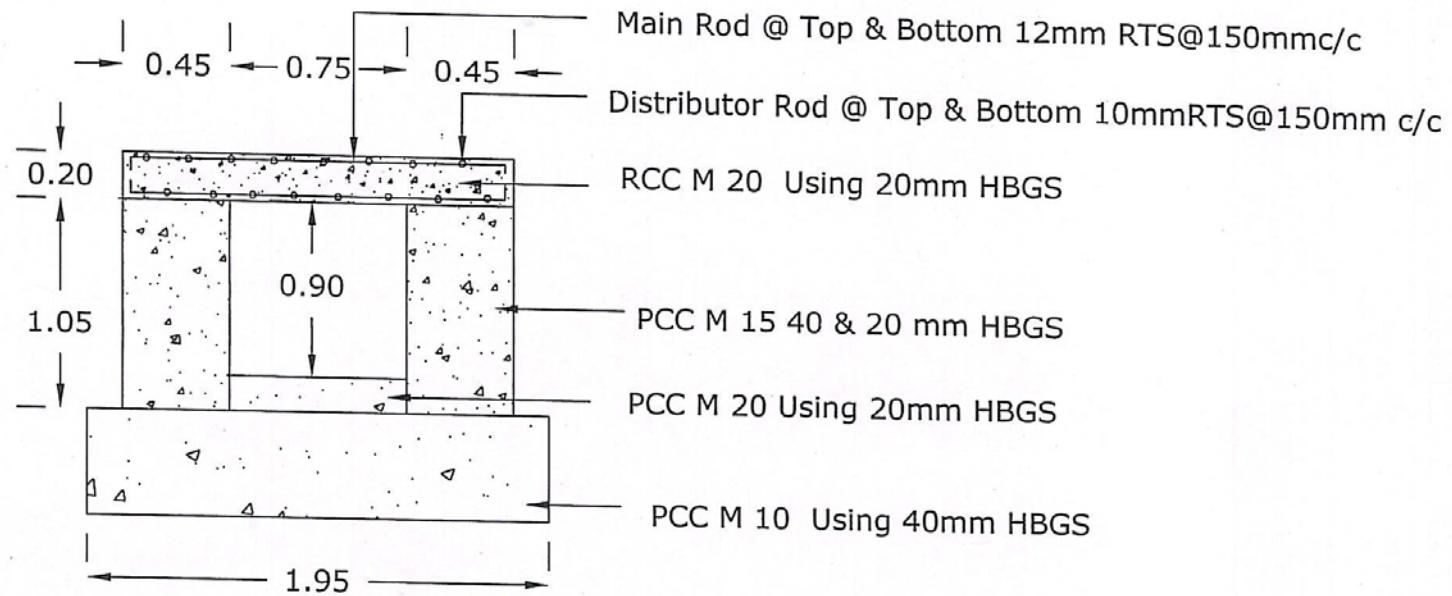
GOVERNMENT OF TAMIL NADU  
WATER RESOURCES ORGANISATION, PWD  
INSTITUTE FOR WATER STUDIES  
TAMIL NADU STATE CENTRE FOR REMOTE SENSING APPLICATION  
THARAMANI, CHENNAI - 113





## 2.3 DESIGN AND DRAWING

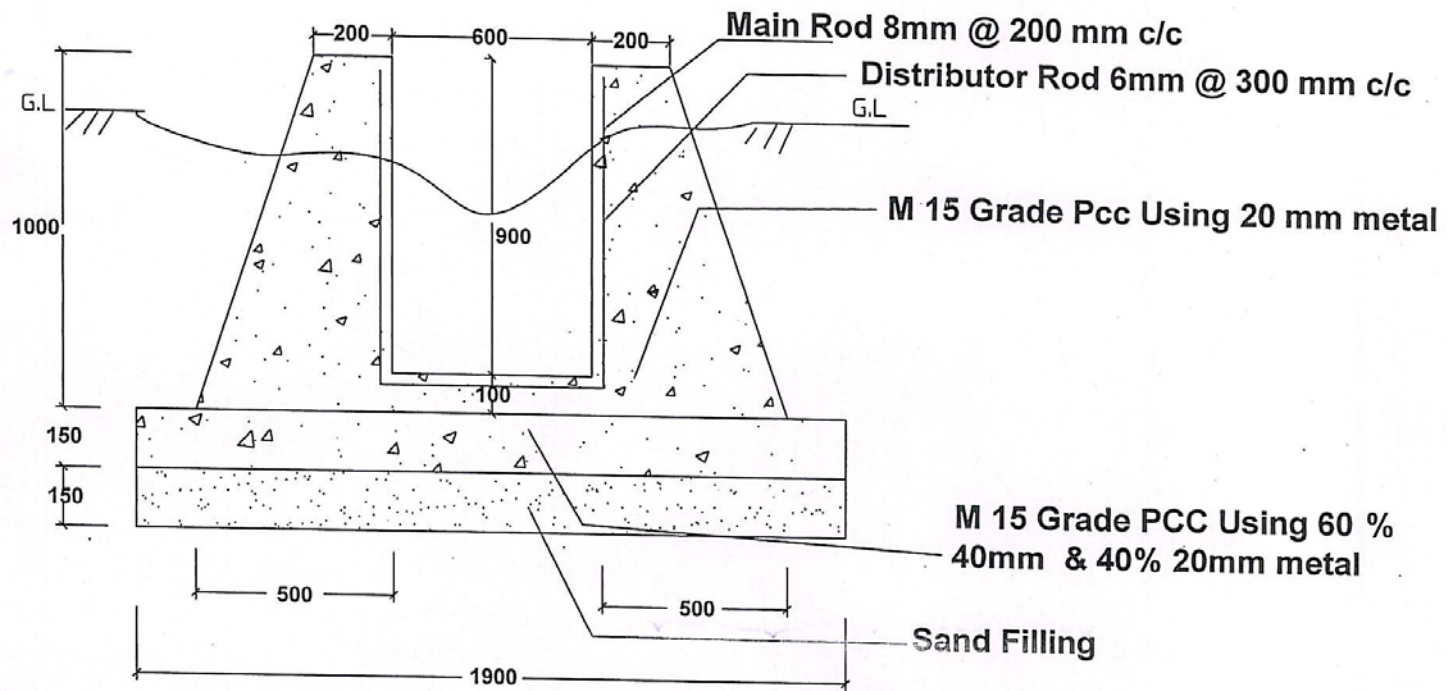




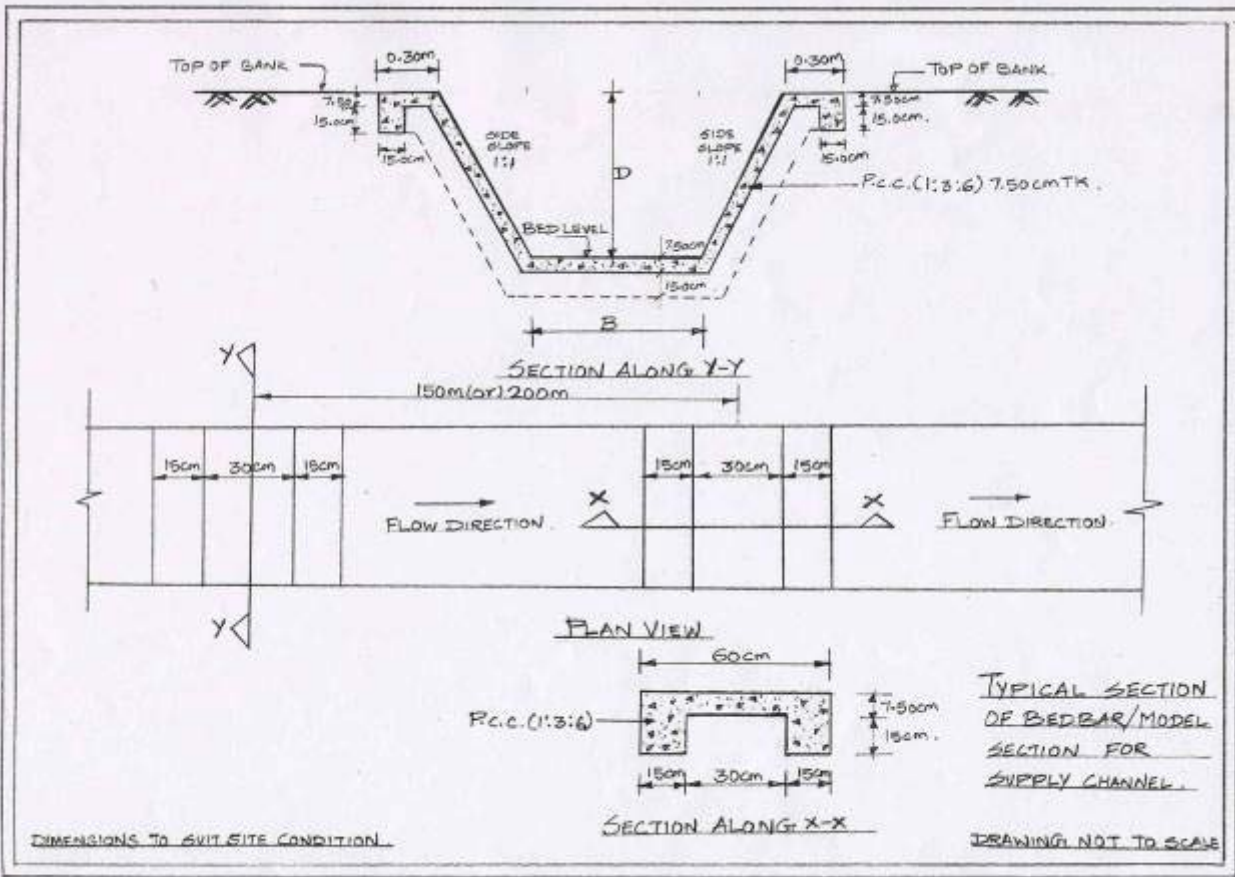
## DETAILS FOR BARREL COVER SLAB OF SLUICE

All Dimensions are in m

## TYPICAL CROSS SECTION OF LINED IRRIGATION CHANNEL

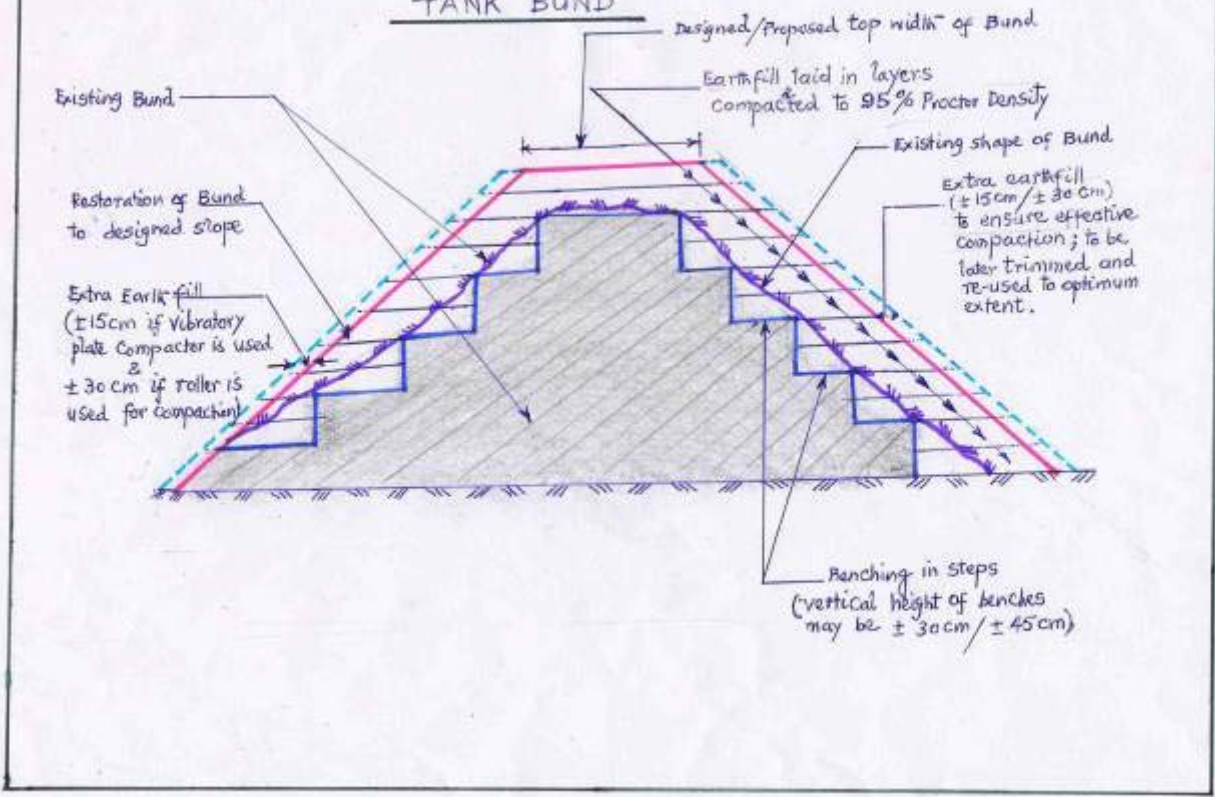


ALL DIMENSIONS ARE IN MM



### TYPICAL SKETCH

## RAISING & STRENGTHENING OF TANK BUND



Existing Bund

Designed/Proposed top width of Bund

Earthfill laid in layers compacted to 95% Proctor Density

Existing shape of Bund

Restoration of Bund to designed slope

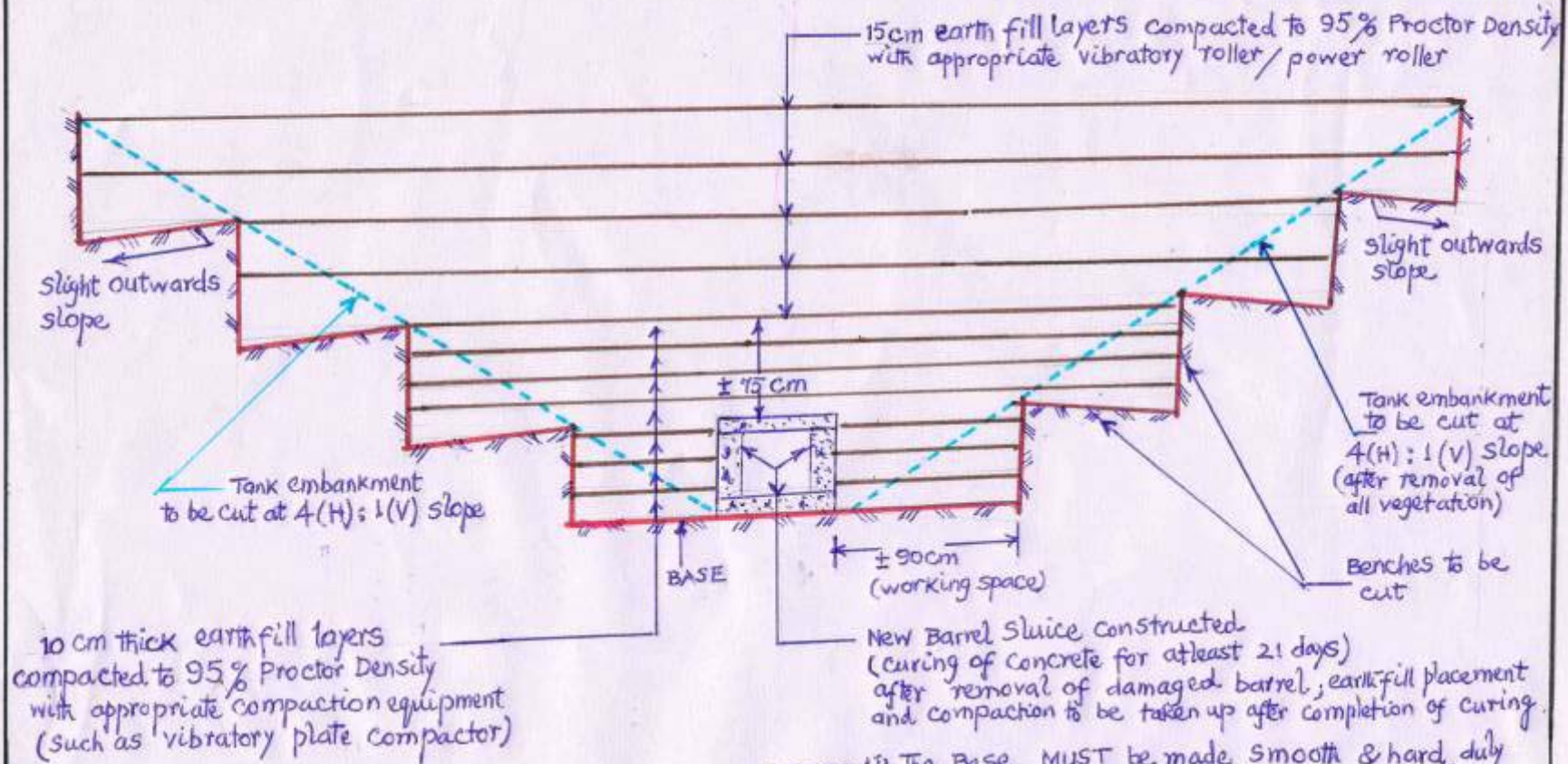
Extra earthfill (± 15 cm / ± 30 cm) to ensure effective compaction; to be later trimmed and re-used to optimum extent.

Extra Earth fill (± 15 cm if Vibratory plate Compactor is used, ± 30 cm if roller is used for compaction)

Benches in steps (vertical height of benches may be ± 30 cm / ± 45 cm)



## 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.

