



GOVERNMENT OF TAMILNADU

PUBLIC WORKS DEPARTMENT

WATER RESOURCES ORGANISATION

TN IAM WARM PROJECT

PAMBAR SUB BASIN

ADDITIONAL PROPOSAL DPR

ESTIMATE COST Rs : 278.31 LAKHS

MADURAI REGION

**Additional proposals for providing Lining of Head Irrigation Channel and Flow
Measuring Device in Pambar sub basin (Phase II)
under IAMWARM Project**

The lining of Head Irrigation channel and installation of measuring device has been proposed for Phase I and II sub basins by utilizing the Project Savings as discussed with the World Bank, during the implementation support mission from Sept 12-20th 2011.

Accordingly in the Pambar sub basin(Madurai Part) of Phase I, the following works have been proposed.

- i) Lining of Head Irrigation channel below the tanks sluice for a distance of about 30m in M15 concrete as per sketch enclosed
- ii) Installing flow measuring device in the Head Irrigation channel as per sketch
- iii) L.S provision of 2.8 % for Provision of labour welfare @ 0.30 % and provision for contingencies, advertisement charges , photographic charges @ 2.5%

The package details are appended separately and works are proposed to be taken up under national shopping procedure

The total cost for the DPR works out to Rs. 278.31 lakhs.

Executive Engineer, PWD/WRD
Manimuthar Basin Division
Devakottai

Superintending Engineer, PWD/WRD
Lower Vaigai Basin Circle
Sivaganga

Chief Engineer, PWD/WRD
Madurai Region, Madurai

FORMAT- I

Name of Region **Madurai**
 Name of Circle **Lower Vaigai Basin Circle, Sivaganga**
 Name of Division **Manimuthar Basin Division, Devakottai**
 Name of Sub Basin **PAMBAR**
 Total Number of Tanks taken up under IAMWARM (P7 Package) : 69
 Nos

NO OF TANKS, SLUICES IN EACH PACKAGE

TOTAL NO OF TANKS TAKEN UNDER IAMWARM : 69 Nos

Rs. in Lakhs

Sl. No.	Package No	Name of Tank	No of Sluice	Flow Measuring Device		Lining the Field channel			Total Amount	L.S.Provision @2.80%	Grand Total	Remarks
				No	Amount	Type of soil BC/OS	Length in Metre	Amount				
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Package-1	Pallathur	3	3	0.36	BC	90	3.78	4.14	0.20	7.22	P6
		Palaiyur	3	3	0.36	BC	60	2.52	2.88			
		Total	6	6	0.72		150	6.3	7.02			
2	Package-2	kandanur	3	3	0.36	BC	90	3.78	4.14	0.23	8.51	P6
		Sakkavayal	3	3	0.36	BC	90	3.78	4.14			
		Total	6	6	0.72		180	7.56	8.28			
3	Package-3	Vethiyangudi keela kanmoi	3	3	0.36	BC	90	3.78	4.14	0.23	8.51	P6
		Sengathangudi	3	3	0.36	BC	90	3.78	4.14			
		Total	6	6	0.72		180	7.56	8.28			
4	Package-4	Nemmeni	2	2	0.24	BC	60	2.52	2.76	0.19	7.09	P6
		ochan	3	3	0.36	BC	90	3.78	4.14			
		Total	5	5	0.60		150	6.3	6.9			
5	Package-5	Pirambuvayal	5	5	0.60	BC	150	6.30	6.90	0.19	7.09	P6
		Total	5	5	0.6		150	6.30	6.90			
6	Package-6	Thiruthangur	3	3	0.36	BC	90	3.78	4.14			P6
		Korappallam	3	3	0.36	BC	90	3.78	4.14			
		Andakudi	3	3	0.36	BC	0	0.00	0.36			

		Total	9	9	1.08		180	7.56	8.64	0.24	8.88	
7	Package-7	Kunnakudi Kanmoi	1	1	0.12	BC	30	1.26	1.38			P7
		Sali Kanmoi	4	4	0.48	BC	100	4.20	4.68			
		Total	5	5	0.6		130	5.46	6.06	0.17	6.23	
8	Package-8	Thiruvelangudi Kanmoi	1	1	0.12	BC	50	2.10	2.22			P7
		Arkadu Kanmoi	4	4	0.48	BC	100	4.20	4.68			
		Total	5	5	0.6		150	6.3	6.90	0.19	7.09	
9	Package-9	Patharakudi Periya Kanmoi	5	5	0.60	BC	125	5.25	5.85			P7
		Total	5	5	0.6		125	5.25	5.85	0.16	6.01	
10	Package-10	Koneri Kanmoi	2	2	0.24	BC	60	2.52	2.76			P7
		Athalai Kanmoi	1	1	0.12	BC	50	2.10	2.22			
		Total	3	3	0.36		110	4.62	4.98	0.14	5.12	
11	Package-11	Karaikudi Kanmoi	3	3	0.36	BC	90	3.78	4.14			P7
		Sekarathi Kanmoi	3	3	0.36	BC	90	3.78	4.14			
		Total	6	6	0.72		180	7.56	8.28	0.23	8.51	
12	Package-12	Senjai Kanmoi	3	3	0.36	BC	90	3.78	4.14			P7
		Sankarapuram Kanmoi	3	3	0.36	BC	90	3.78	4.14			
		Total	6	6	0.72		180	7.56	8.28	0.23	8.51	
13	Package-13	Idayan Kanmoi	3	3	0.36	BC	90	3.78	4.14			P7
		Vettaikaranpatti Kanmoi	3	3	0.36	BC	60	2.52	2.88			
		Total	6	6	0.72		150	6.3	7.02	0.20	7.22	
14	Package-14	Ariyakudi Kanmoi	3	3	0.36	BC	90	3.78	4.14			P7
		Amaravathi Kanmoi	3	3	0.36	BC	90	3.78	4.14			
		Oyyakondan Kanmoi	1	1	0.12	BC	30	1.26	1.38			
		Total	7	7	0.84		210	8.82	9.66	0.27	9.93	
15	Package-15	Unjanai Kanmoi	3	3	0.36	BC	90	3.78	4.14			P7
		Chettiyavayal Kanmoi	1	1	0.12	BC	30	1.26	1.38			
		Perattukkottai Kanmoi	3	3	0.36	BC	90	3.78	4.14			
		Total	7	7	0.84		210	8.82	9.66	0.27	9.93	

16	Package-16	Kovilanvayal kanmoi	2	2	0.24	BC	60	2.52	2.76	0.27	9.93	P7
		Iruvinivayal Kanmoi	2	2	0.24	BC	60	2.52	2.76			
		Chithattivayal Kanmoi	2	2	0.24	BC	60	2.52	2.76			
		Melasemponmari Kanmoi	1	1	0.12	BC	30	1.26	1.38			
		Total	7	7	0.84		210	8.82	9.66			
17	Package- 17	Senthani Kanmoi	3	3	0.36	BC	90	3.78	4.14	0.27	9.93	P7
		Mangalam Kanmoi	4	4	0.48	BC	120	5.04	5.52			
		Total	7	7	0.84		210	8.82	9.66			
18	Package - 18	Sirumarudur Kanmoi	3	3	0.36	BC	90	3.78	4.14	0.27	9.93	P7
		Kandadevi Kanmoi	2	2	0.24	BC	60	2.52	2.76			
		Mannanvayal kanmoi	2	2	0.24	BC	60	2.52	2.76			
		Total	7	7	0.84		210	8.82	9.66			
19	Package - 19	Vengalur Kanmoi	4	4	0.48	BC	120	5.04	5.52	0.27	9.93	P7
		Thalaiyur kanmoi	3	3	0.36	BC	90	3.78	4.14			
		Total	7	7	0.84		210	8.82	9.66			
20	Package-20	Sembiyanvayal Kanmoi	3	3	0.36	BC	90	3.78	4.14	0.27	9.93	P7
		Chithanur Kanmoi	4	4	0.48	BC	120	5.04	5.52			
		Total	7	7	0.84		210	8.82	9.66			
21	Package-21	Siruvai Kanmoi	3	3	0.36	BC	100	4.20	4.56	0.26	9.38	P7
		Nattavai Kanmoi	3	3	0.36	BC	100	4.20	4.56			
		Total	6	6	0.72		200	8.40	9.12			
22	Package-22	Nambiyur kanmoi	3	3	0.36	BC	90	3.78	4.14	0.27	9.93	P7
		Poosalakudi Kanmoi	2	2	0.24	BC	60	2.52	2.76			
		Iluppakudi kanmoi	2	2	0.24	BC	60	2.52	2.76			
		Total	7	7	0.84		210	8.82	9.66			

23	Package-23	Kadathi Kanmoi	1	1	0.12	BC	30	1.26	1.38			P7
		Peria Kodakudi Kanmoi	2	2	0.24	BC	60	2.52	2.76			
		Chinna Kodakudi Kanmoi	2	2	0.24	BC	60	2.52	2.76			
		Kumaramangalam Kanmoi	2	2	0.24	BC	60	2.52	2.76			
		Total	7	7	0.84		210	8.82	9.66	0.27	9.93	
24	Package-24	T.Siruvanur Kanmoi	4	4	0.48	BC	100	4.20	4.68			P7
		Theralappur Kanmoi	4	4	0.48	BC	100	4.20	4.68			
		Total	8	8	0.96		200	8.4	9.36	0.26	9.62	
25	Package-25	Muthunadu Kanmoi Sluice 1 & 2	2	2	0.24	BC	225	9.45	9.69			P7
		Total	2	2	0.24		225	9.45	9.69	0.27	9.96	
26	Package-26	Muthunadu Kanmoi Sluice 3 & 4	2	2	0.24	BC	225	9.45	9.69			P7
		Total	2	2	0.24		225	9.45	9.69	0.27	9.96	
27	Package-27	Kandiyur Kanmoi	2	2	0.24	BC	60	2.52	2.76			P7
		Thevarendal North & South Kanmoi	2	2	0.24	BC	60	2.52	2.76			
		Iluppakudi Pudu kanmoi	2	2	0.24	BC	60	2.52	2.76			
		Total	6	6	0.72		180	7.56	8.28	0.23	8.51	
28	Package-28	Vakkanakkottai Kanmoi	2	2	0.24	BC	60	2.52	2.76			P7
		Sadayamangalam Kanmoi	3	3	0.36	BC	90	3.78	4.14			
		Total	5	5	0.60		150	6.30	6.90	0.19	7.09	
29	Package-29	Kannankudi Kanmoi	2	2	0.24	BC	60	2.52	2.76			P7
		Kattavilagam Kanmoi	3	3	0.36	BC	90	3.78	4.14			
		Total	5	5	0.60		150	6.30	6.90	0.19	7.09	
30	Package-30	Vadakiludi Kanmoi	5	5	0.60	BC	150	6.30	6.90			P7
		Total	5	5	0.60		150	6.30	6.90	0.19	7.09	
31	Package-31	Vilangudi Kanmoi	4	4	0.48	BC	120	5.04	5.52			P7
		Total	4	4	0.48		120	5.04	5.52	0.15	5.67	
32	Package-32	Arakkottai Kanmoi	5	5	0.60	BC	150	6.30	6.90			P7
		Total	5	5	0.60		150	6.30	6.90	0.19	7.09	

33	Package-33	Pillamangalam Peria Kye cum Alan Kye and Pattathi Kanmoi	3	3	0.36	BC	90	3.78	4.24			P7
		Seeratha Kanmoi Cum Mannan Periya Kye and Nanga Kanmoi	1	1	0.12	BC	30	1.26	1.38			
		Total	4	4	0.48		120	5.04	5.62	0.16	5.78	
34	Package-34	Neivasal Periya Kye cum chetti Kye,Narangiyam kye and Pudu kye	4	4	0.48	BC	120	5.04	5.52			P7
		Total	4	4	0.48		120	5.04	5.52	0.15	5.67	
GRAND TOTAL			192	192	23.04		5895.00	247.59	270.73	7.58	278.31	

Certified that the Tanks included in the originally approved in Pambar Sub Basin DPR alone are considered now

Certified that the above works have not been taken up in any other Project

Certified that the field / Irrigation Channel drawing type II is adopted in 69 number of tanks having block cotton soil

FORMAT II

Name of Region **Madurai**
 Name of Circle **Lower Vaigai Basin Circle, Sivaganga**
 Name of Division **Manimuthar Basin Division, Devakottai**
 Name of Sub Basin **Pambar**

Total Number of Tanks taken up under IAMWARM : 69

Method of procurement : National shopping

(Note : Procurement plan to be got approved by World Bank separately)

Rs in Lakhs

PACKAGEWISE ABSTRACT

SI.No	Package No.	Name of Work	No. of Tanks	Flow Measuring Device (Nos)	Lining the Field Channel in M	Total Amount including L.S. (Rs. In Lakhs)	Remarks
1	2	3	4	5	6	7	8
1	AP-1/ IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Pallathur Tank and Palaiyur Tank in Pambar Sub basin in Sivagangai District	2	6	150	7.22	P6
2	AP-2/ IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Kandanur Tank and Sakkavayal Tank in Pambar Sub basin in Sivagangai District	2	6	180	8.51	P6
3	AP-3/ IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Vethiyangudi keela Tank, Sengathangudi tank in Pambar Sub basin in Sivagangai District	2	6	180	8.51	P6
4	AP-4/ IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Nemmeni Tank, ochan Tank in Pambar Sub basin in Sivagangai District	2	5	150	7.09	P6
5	AP-5/ IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Pirambuvayal Tank in Pambar Sub basin in Sivagangai District	1	5	150	7.09	P6

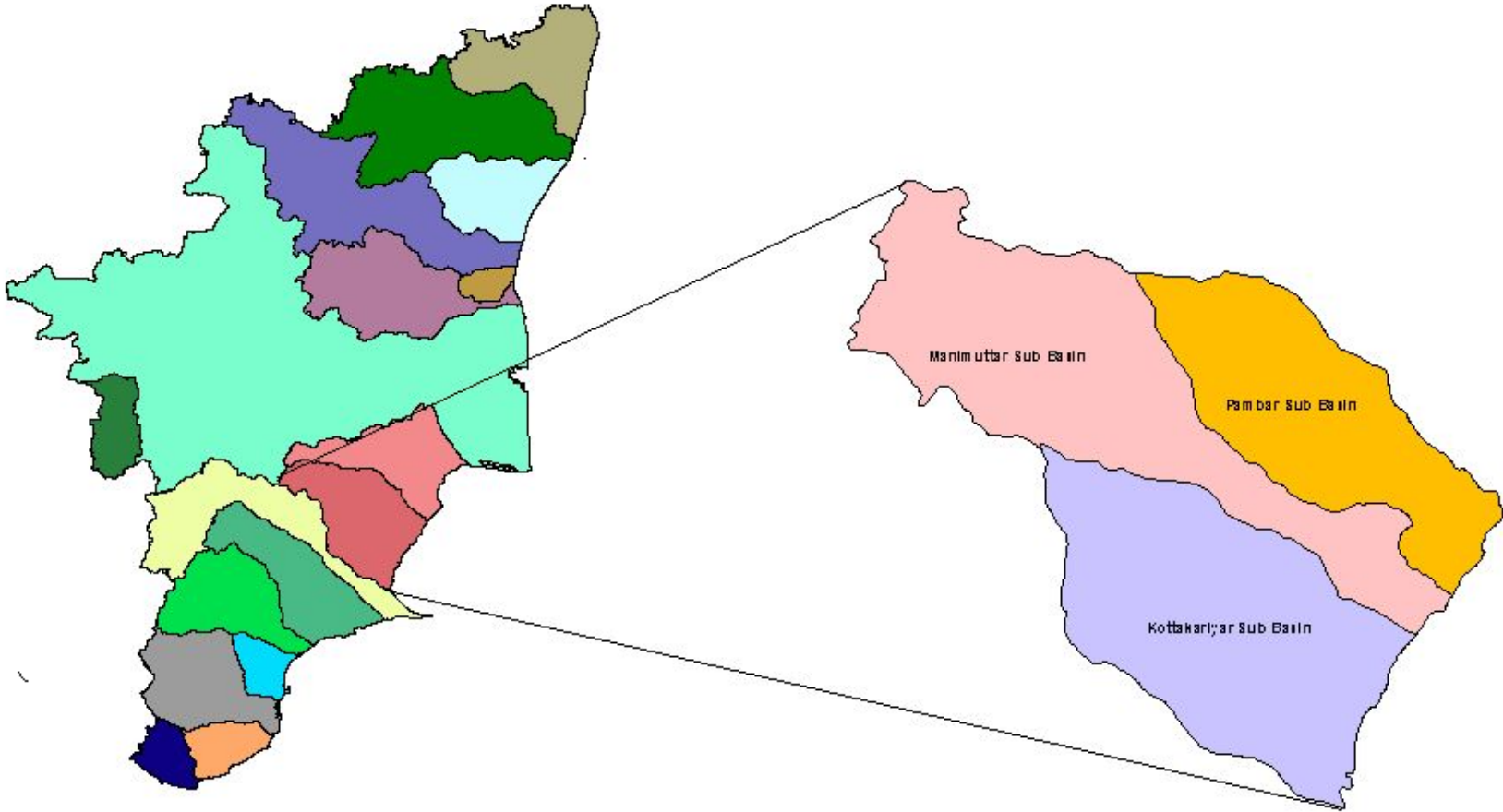
6	AP-6 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Thiruthangur Tank, Korapallam Tank Andakudi tank in Pambar Sub basin in Sivagangai District	3	9	180	8.88	P6
7	AP-7 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Kunnakudi Kanmoi,Sali Kanmoi in Pambar Sub basin in Sivaganga District	2	5	130	6.23	P7
8	AP-8 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Thiruvellankudi Kanmoi,Arkadu Kanmoi in Pambar Sub basin in Sivaganga District	2	5	150	7.09	P7
9	AP-9 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Patharakudi Periya Kanmoi in Pambar Sub basin in Sivaganga District	1	5	125	6.01	P7
10	AP-10 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Koneri Kanmoi,Athalai Kanmoi in Pambar Sub basin in Sivaganga District	2	3	110	5.12	P7
11	AP-11 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Karaikudi Kanmoi,Sekarathi Kanmoi in Pambar Sub basin in Sivaganga District	2	6	180	8.51	P7
12	AP-12 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Senjai natter Kanmoi,Sankarapuram Kanmoi in Pambar Sub basin in Sivaganga District	2	6	180	8.51	P7
13	AP-13 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Idayan Kanmoi,Vettaikaranpatti Kanmoi in Pambar Sub basin in Sivaganga District	2	6	150	7.22	P7
14	AP-14 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Ariyakudi Kanmoi,Amaravathi Kanmoi,Oyyakondan Kanmoi in Pambar Sub basin in Sivaganga District	3	7	210	9.93	P7
15	AP-15 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Unjanai Kanmoi,Chettiyavayal Kanmoi,Perattukkottai Kanmoi in Pambar Sub basin in Sivaganga District	3	7	210	9.93	P7

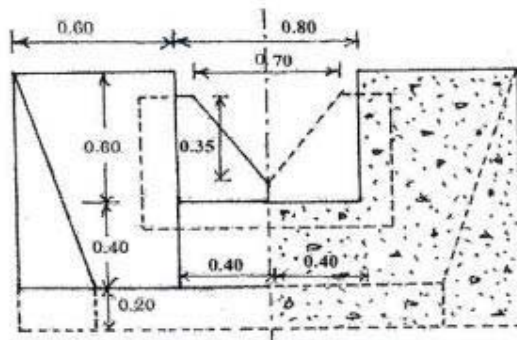
16	AP-16 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Kovilanvayal Kanmoi,Iruvinivayal Kanmoi,Chithattivayal Kanmoi, Melasemponmari Kanmoi in Pambar Sub basin in Sivaganga District	4	7	210	9.93	P7
17	AP_17 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Senthani Kanmoi,Mangalam Kanmoi in Pambar Sub basin in Sivaganga District	2	7	210	9.93	P7
18	AP-18 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Sirumarudur Kanmoi,Kandadevi Kanmoi,Mannanvayal Kanmoi in Pambar Sub basin in Sivaganga District	3	7	210	9.93	P7
19	AP-19/ IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Vengalur Kanmoi,Thalaiyur Kanmoi in Pambar Sub basin in Sivaganga District	2	7	210	9.93	P7
20	AP-20 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Sembianvayal Kanmoi,Chithanur Kanmoi in Pambar Sub basin in Sivaganga District	2	7	210	9.93	P7
21	AP-21/ IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Siruvali Kanmoi,Nattavali Kanmoi in Pambar Sub basin in Sivaganga District	2	6	200	9.38	P7
22	AP-22 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Nambiyur Kanmoi,Poosalakudi Kanmoi,Iluppakudi Kanmoi in Pambar Sub basin in Sivaganga District	3	7	210	9.93	P7
23	AP-23 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Kadathi Kanmoi,Periyakodakudi Kanmoi,Chinnakodakudi Kanmoi,Kumaramangalam Kanmoi in Pambar Sub basin in Sivaganga District	4	7	210	9.93	P7
24	AP-24 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for T.Siruvanur Kanmoi,Theralappur Kanmoi, in Pambar Sub basin in Sivaganga District	2	8	200	9.62	P7
25	AP-25 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Muthunadu Kanmoi Sluice No 1 & 2 in Pambar Sub basin in Sivaganga District	1	2	225	9.96	P7

26	AP-26 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Muthunadu Kanmoi Sluice No 3 & 4 in Pambar Sub basin in Sivaganga District		2	225	9.96	P7
27	AP- 27 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Kandiyur Kanmoi,Thevarendal North & South Kanmoi,Iluppakudi Pudu Kanmoi in Pambar Sub basin in Sivaganga District	3	6	180	8.51	P7
28	AP-28 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Vakkanakkottai Kanmoi, Sadayamangalam Kanmoi in Pambar Sub basin in Sivaganga District	2	5	150	7.09	P7
29	AP-29 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2011	Lining of head Irrigation Channel and providing Flow Measuring devices for Kannankudi Kanmoi, Kattavilagam Kanmoi Pambar Sub basin in Sivaganga District	2	5	150	7.09	P7
30	AP-30 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Vadakilkudi Kanmoi in Pambar Sub basin in Sivaganga District	1	5	150	7.09	P7
31	AP-31 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2013	Lining of head Irrigation Channel and providing Flow Measuring devices for Vilangudi Kanmoi in Pambar Sub basin in Sivaganga District	1	4	120	5.67	P7
32	AP-32 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Arakkottai Kanmoi in Pambar Sub basin in Sivaganga District	1	5	150	7.09	P7
33	AP-33 / IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for pillamangalam Periya Kye cum Alan Kye and Pattathi Kanmoi,and Seeratha Kye cum Mannan Periya Kye and Nanga Kye in Pambar Sub basin in Pudukottai District	2	4	120	5.78	P7
34	AP-34/ IAMWARM/ WRD/ Pambar/ WORKS/ II / 2011-2012	Lining of head Irrigation Channel and providing Flow Measuring devices for Neivasal Periya cum Chetti Kunmoi, Naragiyan Kye and Pudu kye in Pambar Sub basin in Pudukottai District	1	4	120	5.67	P7
		Total	69	192	5895	278.31	

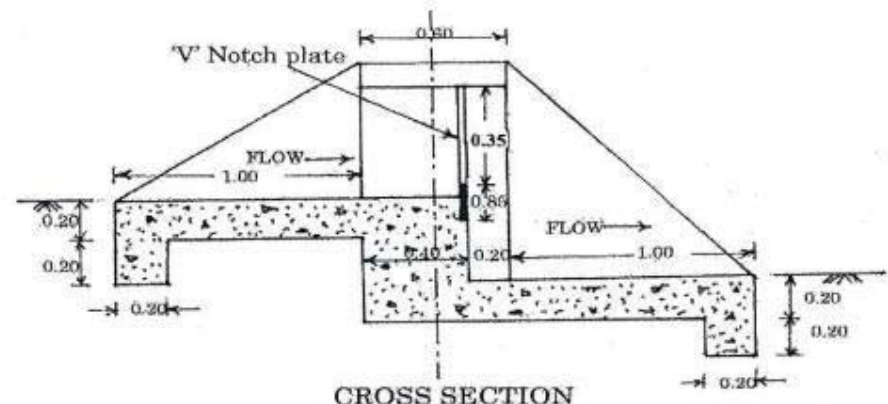
**278.31
Lakhs**

PAMBAR SUB BASIN
INDEX MAP



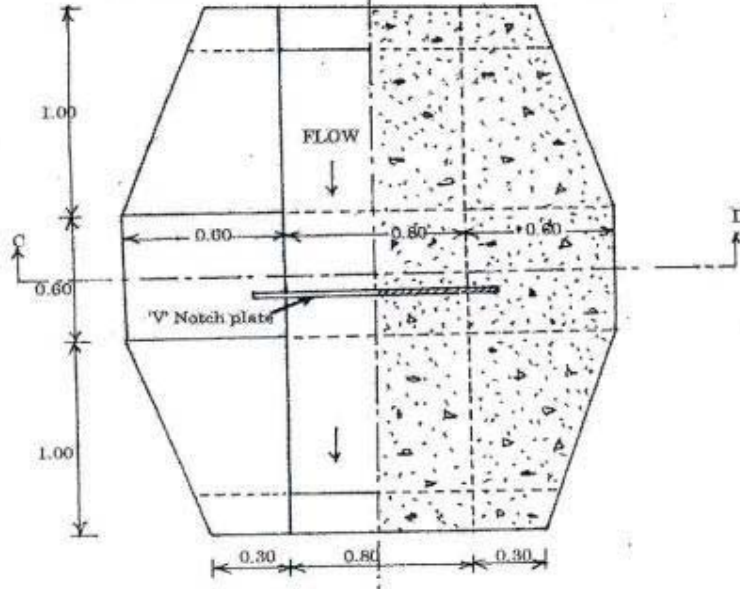


HALF FRONT ELEVATION AND HALF SECTIONAL ELEVATION AT 'CD'



CROSS SECTION

TYPE - C
3 CUSC V-NOTCH



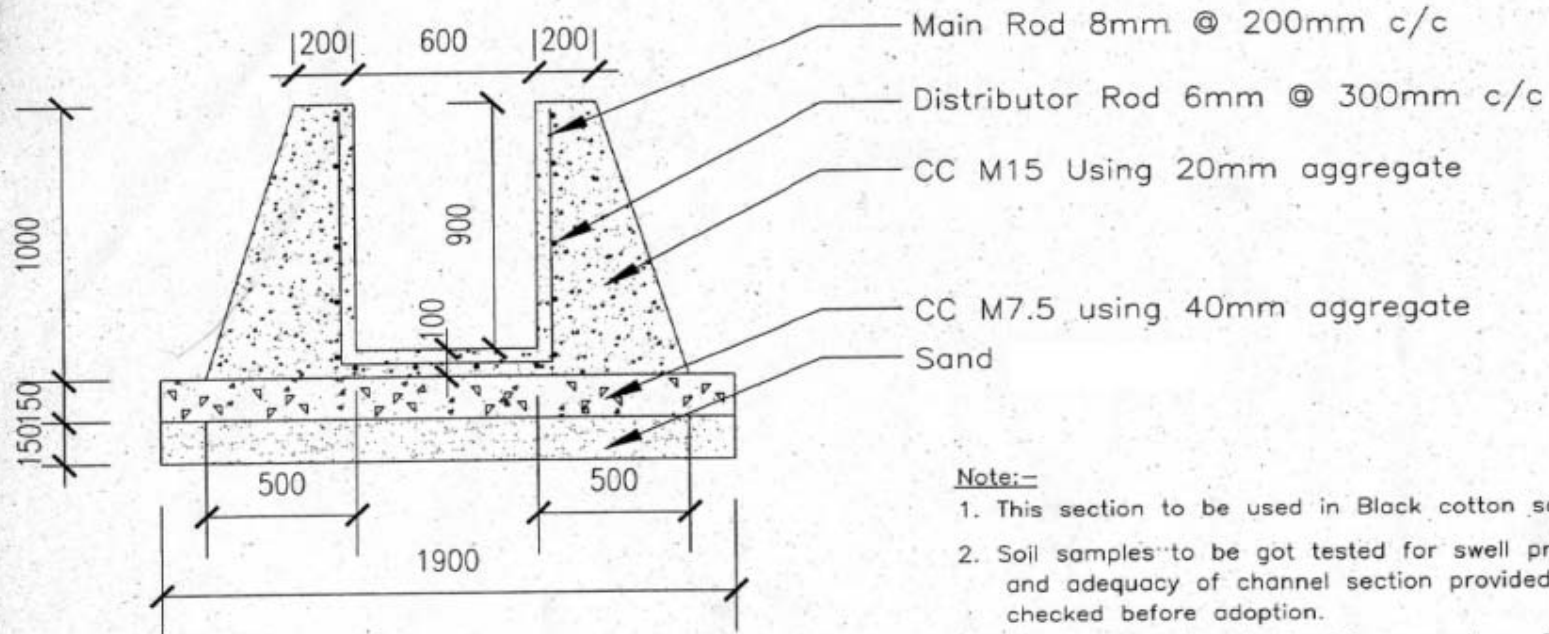
HALF PLAN AT TOP AND HALF PLAN AT BOTTOM

'V' - NOTCH - SALIENT DETAILS (For 1 to 4 C/s)

Discharge		Head Over Crest Cm	'V' Notch size Cm	Overall size Cm
Cusec	litre / sec			
1	28.3	20.5	25 x 50	50 x 85
2	56.6	27	30 x 60	50 x 75
3	85	32	35 x 70	55 x 90
4	113.27	36	42 x 84	60 x 100

IAMWARM PROJECT - PHASE IV
PARALAIYAR SUB BASIN
PROVIDING FLOW MEASURING
DEVICE ('V' NOTCH) IN THE FIELD
CHANNEL OF TANK SLUICE
Scale :- 1cm = 0.25m
All dimation are in 'Metre'

LINING OF IRRIGATION CHANNEL
TYPICAL CROSS SECTION
FOR BLACK COTTON SOIL



Note:-

1. This section to be used in Black cotton soil.
2. Soil samples to be got tested for swell pressure and adequacy of channel section provided to be checked before adoption.
3. Nominal cover to steel reinforcements = 30 mm

IAMP/AM PROJECT
 KOTTAKARAIYAR SUB BASIN
 IRRIGATION CHANNEL LINING
 Scale:-1:1000
 All dimension are in MM