

PUBLIC WORKS DEPARTMENT

WATER RESOURCES DEPARTMENT

CHENNAI REGION

TAMILNADU IRRIGATED AGRICULTURE MODERNIZATION PROJECT (TNIAMP)

PHASE– III

MANIMUKTHANADHI SUB BASIN

DETAILED PROJECT REPORT

PROJECT COST :Rs.1344.00 LAKHS.

AYACUT:2830.15Ha.

CHENNAI REGION, CHENNAI,

VELLAR BASIN CIRCLE, CUDDALORE,

VELLAR BASIN DIVISION, VRIDHACHALAM.

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1. INTRODUCTION

DETAILED PROJECT REPORT OF THE MANIMUKTHA SUB BASIN PROPOSED UNDERTNIAMP PHASE - III

1.1.General

Agriculture continues to be the most predominant sector of the State economy, as 70percent of the population is engaged in Agriculture and allied activities for their livelihood. The State has as an area of 1.32 Lakhs sq.km with a gross cropped area of around 63 Lakh hectares.

Tamilnadu depends largely on the surface water irrigation as well as ground water irrigation. The state has used the surface and ground water potential to the maximum limit and hence the future development and expansion depends mainly on the efficient and economical use ofwater potential and resources. To achieve higher water use efficiency, it is necessary to improve and upgrade the existing conveyance system and also to introduce modern irrigation methods. With the above objective, a comprehensive programme has been proposed with a Multi Disciplinary Approach.

The Government of Tamilnadu have taken a number of progressive actions on water resources and irrigation management, for the modernization of the Traditional Irrigation systems in TamilNadu under the World Bank funded TNIAM Project. This multifaceted approach will not only increase the agricultural productivity, it will also expect to yield wholistic benefits to the farming community.

1.2. Description of the Vellar Basin

There are 17 major River basins in Tamilnadu. Vellar basin is one among them. Vellar river basin located in Salem, Villupuram, Perambalur, Ariyalur and Cuddalore districts of Tamil Nadu. The Vellar river originates in the Chitteri Hills of Dharmapuri District in the name of Anaimaduvu river and Thumbal river and Singipuram river are originates at Jallattu reserve forest area at 8 Km east of Salem in Salem district and flows through Villupuram, Namakkal , Perambalur and Ariyalur District and Cuddalore District finally falls into the Bay of Bengal.The

Vellar basin is situated between the coordinates of N latitude 11^0 13'-$12^0$00" and E Longitude 78^0 13" - 79^0 47". The Vellar basin is bounded by Pennaiyar and Paravanar basins at north, Cauvery basin in the west & south the Bay of Bengal in the east.This basin has been divided into 7 sub-basins namely as follows;

1. Upper Vellar
2. Swethanadhi
3. Chinnar
4. Anaivariodai
5. Gomukhi nadhi.
6. Manimukthanadhi
7. Lower vellar.

1.3. Description of the ManimukthaNadhi Sub Basin

The basin originates in Kalryan hills with drainage Area of 749.54 Km having two drainages namely Mani river and Muktha river originating in the Northern part of the eastern slope of the Kalrayn Hills in SankarapuramTaluk at an altitude of about 40 km and the Muktha River flows for 32 km. These two rivers confluence ManimukthaNadhi sub basin having 18 Anicuts , 47 PWD tanks, and one ManimukthaNadhi reservoir having the total Ayacut of 6131.87Hectares. Average rainfall is 1767 mm in this sub basin.

Tanks in ManimukthaNadhiSub Basin

a. Nonsystem Tank

In ManimukthaNadhi Sub Basin, 47 non system tanks lies in which 13 tanks already executed under IAMWARM, TNIAMP RAF, Kudimaramathu Scheme 2016-17 & 2017-18, 2019-2020 , Restoration of Traditional Water bodies Scheme and remaining 34 Tanks to be taken up for Rehabiltation and Modernisation under TNIAMP Phase –III.

b. Anicuts

In ManimukthaNadhi Sub Basin there are 18Anicuts lies in which 8Anicuts were already executed in various Scheme and remaining 10Anicuts to be taken up TNIAMP – Phase – III.

The Ten Anicuts to be executed under this scheme are as follows

Anicuts in Kallakurichi District

1. KaradichithurAnicut
2. KumarapalaiyamAnicut
3. ThavadipattuAnicut
4. PallakatcheriAnicut
5. KootthakudiAnicut
6. PoottaiAnicut
7. PandalamAnicut
8. ChellampattuAnicut
9. PanaiyankaalAnicut
10. SeshasamuthiramAnicut

c. Supply channels in Manimuktha sub basin

In ManimukthaNadhi Sub Basin, there are 34 non system tank supply channels are to be executed. In ManimukthaNadhi Sub Basin, Existing tank supply channels of length 109.41km is available and now sectioning the tank supply channels for the length of 38.65 km is proposed. In ManimukthaNadhiSub Basin, Existing Anicut supply channels oflength6.00 km is available and now sectioning the Anicut supply channels for the length of 1.50 km is proposed.

1.4 List of Blocks, Taluks ,Districtsand Ayacut details:

1.4.1.List of Blocks, Taluks andDistricts covered in Manimukthanadhi sub basin

District	Taluk	Block
Kallakurichi	Kallakurichi	Kallakurichi
		Thiyagaurgam
		Sankarapuram
		Chinnasalem
	Sankarapuram	Kallakurichi
		Thiyagaurgam
		Sankarapuram
		Chinnasalem
		Rishivanthiyam
	Chinnasalem	Kallakurichi
		Chinnasalem

1.4.1 a) List of Districts, Blocks and Taluks and Ayacut details of the Tanks proposed in this project:

S. No	District	Block	Taluk	No of Tanks	Ayacut ha
1	Kallakurichi	Kallakurichi	Kallakurichi	1	57.95
2	Kallakurichi	Thiyagaurgam	Kallakurichi	10	759.41
3	Kallakurichi	Chinnasalem	Sankarapuram	2	198.28
4	Kallakurichi	Kallakurichi	Sankarapuram	4	654.86
5	Kallakurichi	Thiyagaurgam	Sankarapuram	3	187.24
6	Kallakurichi	Sankarapuram	Sankarapuram	9	693.95
7	Kallakurichi	Rishivanthiyam	Sankarapuram	5	118.21
			Total	**34**	**2669.90**

1.4.1 b) List of Districts, Blocks, Taluks and Ayacut details of the Anicuts proposed in this project:

S.No	District	Block	Taluk	No of Anicuts	Ayacut ha
1	Kallakurichi	Sankarapuram	Kallakurichi	1	48.50
2	Kallakurichi	Thiyagaurgam	Kallakurichi	1	-
3	Kallakurichi	Thiyagaurgam	Sankarapuram	1	60.77
4	Kallakurichi	Sankarapuram	Sankarapuram	4	39.64
5	Kallakurichi	Kallakurichi	Chinnasalem	3	11.34
			Total	**10**	**160.25**

Command area:

In ManimukthaNadhi sub basin, 47 tanks and 18 anicuts.Total ayacut for

47 Tanks - 3459.98 Ha

Total ayacut for 18 anicuts - 951.89 Ha

Manimuktha Nadhi reservoir - 1720.00 Ha

Grand total - 6131.87 Ha

13 Non system tanks and 8 anicuts were executed under various schemes and its breakup details is furnished in chapter 5.5

The work proposed now in this sub basin are 34 tanks and 10 anicuts

Total ayacut for 34 Tanks - 2669.90 Ha

Total ayacut for 10 anicuts - 160.25 Ha

Grand total - 2830.15 Ha

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1.5 Population Details

1.5.1 Population Size: Urban and Rural

Sl. No.	Sub Basin	Urban Population in million	Rural Population in million	Total Population in million
1	Manimukthanadhi sub basin	0	180583	180583

*Data from Revenue department

1.5.2 Population Density

Sl No	Sub Basin	Area Sq.km	Total Population	Density in Person / sq.km
1	Manimukthanadhi	749.54	180,583	240.92

*Data from Revenue department

1.5.3 Population Sex

District	Classification	Male	%	Female	%
Kallakurichi	Rural	91140	51%	89339	49%
	Urban	-	-	-	-
	Total	91140	51%	89339	49%

Sex ratio in this basin

In Manimukthanadhi sub basin **980** Female per **1000**male

1.5.4 Literacy Level

S.No	District	Literacy level	
		Male	Female
1	Kallakurichi	70%	61%

*Data from Revenue department

1.6 Convergent Table

1.6.1 Cluster Classification for Multi department convergence

Five cluster villages are identified and listed below

Sl. No.	No. of Cluster	Name of Cluster	Block	Taluk	District
1	CLUSTER I	Peruvangur	Kallakurichi	Kallakurichi	Kallakurichi
2	CLUSTER II	Chittalur	Thiyagadurgam	Kallakurichi	Kallakurichi
3	CLUSTER III	Chellampattu	Sankarapuram	Sankarapuram	Kallakurichi
4	CLUSTER IV	Kallaerikuppam	Rishivanthiyam	Sankarapuram	Kallakurichi
5	CLUSTER V	Kachirapalayam	Chinnasalem	Kallakurichi	Kallakurichi

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1.6.2 Cluster Wise / Infrastructure Wise / Village Wise- WRD Table

Sl	Name of the cluster/ Infrastructure/ Village	Total Ayacut (Ha)			Total Ayacut (Ha)			WRD activities
		FI	PI	Gap	Wop	Wp	Gap	
1	2	3	4	5	6	7	8	9
I	CLUSTER I							
1	Peruvangur	22.89	22.60	12.46	45.49	57.95	-	Bund Strengthening, Repair of sluice &Weir ,Improvements to supply Channel and fixing of boundary stone.
2	Thandalai	51.16	49.28	27.45	100.44	127.89	-	
3	Alathur	261.60	34.20	17.15	295.8	312.95	-	
4	Ka.Alambalam	38.45	27.52	27.81	65.97	93.78	-	
5	Thirukanangur	47.50	46.89	25.85	94.39	120.24	-	
6	KumarapalayamAnicut	4.54	4.31	2.49	8.85	11.34	-	Repairs to apron and skin wall.
	Total	**426.14**	**184.8**	**113.21**	**610.94**	**724.15**		
II	CLUSTER II							
7	Chittalur Tank	64.65	59.98	31.16	124.63	155.79	-	Bund Strengthening,
8	Kalayanallur Small Tank	11.05	11.33	5.59	22.38	27.97	-	
9	Kalayanallur Tank	11.40	10.42	6.15	21.82	27.97	-	
10	Koothakkudi Tank &Anicut	34.87	35.75	16.56	70.62	87.18	-	

11	Pallagacheri Tank &Anicut	76.78	74.88	40.41	151.66	192.07	-	Repair of sluice &Weir , Improvements to supply Channel and fixing of boundary stone, Repairs to anicut.
12	Prithivimangalam	61.58	57.03	33.45	118.61	152.06	-	
13	Udayanatchi Tank	23.84	24.09	11.98	47.93	59.91	-	
14	VadaThorasalur Tank	20.37	19.36	11.20	39.73	50.93	-	
15	Kudiyanallur Tank	23.38	21.19	11.14	44.57	55.71	-	
16	Ninaiyur Tank	19.87	19.39	9.82	39.26	49.08	-	
17	Sithathur Tank	19.93	18.95	9.72	38.88	48.6	-	
18	Thiyagai Tank	21.89	21.08	11.08	42.97	54.05	-	
19	Udamampattu Tank	18.44	18.90	8.76	37.34	46.1	-	
	Total	**408.05**	**392.35**	**207.02**	**800.4**	**1007.42**		
III	**CLUSTER III**							
20	Chellampattu Tank &Anicut	22.02	21.20	10.47	43.22	53.69	-	Bund Strengthening, Repair of sluice ,
21	Kosapadi Tank	23.29	23.60	12.84	46.89	59.73	-	
22	Manjaputtur Tank	36.14	37.06	18.30	73.2	91.5	-	
23	Pandalam Tank &Anicut	63.68	60.61	29.15	124.29	153.44	-	
24	Poikunam Tank	16.65	16.40	8.26	33.05	41.31	-	
25	Pootai Tank &Anicut	55.28	54.80	30.37	110.08	140.45	-	

26	Sembarampattu Tank	17.63	18.07	8.37	35.7	44.07	-	Improvements to supply Channel and fixing of boundary stone, Repairs to anicut.
27	Urangani Tank	35.36	36.79	16.92	72.15	89.07	-	
28	Vadachettiyandal	19.20	18.38	10.60	37.58	48.18	-	
29	PanaiyankaalAnicut	20.67	17.64	10.19	38.31	48.5	-	
30	SeshasamuthiramAnicut	4.38	4.12	3.65	8.5	12.15	-	
	Total	**314.3**	**308.67**	**159.12**	**622.97**	**782.09**		
IV	**CLUSTER IV**							
31	Kallerikuppam Tank	5.70	4.95	3.00	10.65	13.65	-	Bund Strengthening, Repair of sluice &Weir , Improvements to supply Channel and fixing of boundary stone
32	PalayaSiruvangurPeriyaeri	21.55	20.84	11.61	42.39	54	-	
33	PalayaKorakachandal tank	1.95	1.99	0.95	3.94	4.89	-	
34	Pallipattu	8.67	8.77	4.23	17.44	21.67	-	
35	Velanmandal Tank	9.60	9.12	5.28	18.72	24	-	
	Total	**47.47**	**45.67**	**25.07**	**93.14**	**118.21**		

V	CLUSTER V							
36	Kacharayapalayam Tank	35.95	36.4	17.53	72.35	89.88	-	Bund Strengthening, Repair of sluice &Weir , Improvements to supply Channel and fixing of boundary stone
37	VadakanandalKalleri Tank	43.36	43.76	21.28	87.12	108.4	-	
	SubTotal	**79.31**	**80.16**	**38.81**	**159.47**	**198.28**		
	Total	**1275.27**	**1011.65**	**543.23**	**2286.92**	**2830.15**		

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1.6.3 Cluster Wise / Infrastructure Wise / Village Wise - WRD Table Abstract

S.No	Name of the cluster/ Infrastructure/ Village	Total Ayacut (Ha)			Total Ayacut (Ha)			WRD Activities
		FI	PI	Gap	Wop	WP	Gap	
1	2	3	4	5	6	7	8	9
1	CLUSTER I	426.14	184.8	113.21	610.94	724.15	-	Bund Strengthening, Repair of sluice & Weir, Improvements to supply Channel and fixing of boundary stone , Repairs to Anicuts
2	CLUSTER II	408.05	392.35	207.02	800.4	1007.42	-	
3	CLUSTER IIi	314.3	308.67	159.12	622.97	782.09	-	
4	CLUSTER IV	47.47	45.67	25.07	93.14	118.21	-	
5	CLUSTER V	79.31	80.16	38.81	159.47	198.28	-	
	Total	**1275.27**	**1011.65**	**543.23**	**2286.92**	**2830.15**		

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1.6.4 Details of WRD Infrastructure with Unicode Nos

SL.NO	Name of Tank/Anicut/Supply Channel	Unicode	Village	Block	Taluk	District	Ayacut (Ha)			
							FI	PI	Gap	Total
1	4	3	5	6	7	8	9	10	11	12
	CLUSTER I									
1	Peruvangur	TN VE-06 T 0054	Peruvangur	Kallakurichi	Kallakurichi	Kallakurichi	22.89	22.60	12.46	57.95
2	Thandalai	TN VE-06 T 0041	Thandalai	Kallakurichi	Sankarapuram	Kallakurichi	51.16	49.28	27.45	127.89
3	Alathur	TNVE-06-T0035	Alathur	Kallakurichi	Sankarapuram	Kallakurichi	261.60	34.20	17.15	312.95
4	Ka.Alambalam	TN VE-06 T 0037	Ka.Alambalam	Kallakurichi	Sankarapuram	Kallakurichi	38.45	27.52	27.81	93.78
5	Thirukanangur	TN VE-06 T 0031	Thirukkanangur	Kallakurichi	Sankarapuram	Kallakurichi	47.50	46.89	25.85	120.24
6	Kumarapalyam Anicut	-	Kumarapalaiyam	Kallakurichi	Chinnasalem	Kallakurichi	4.54	4.31	2.49	11.34

	CLUSTER II									
7	Chittalur Tank	TN VE-06 T 0083	Chittalur	Thiagadurugam	Kallakurichi	Kallakurichi	64.65	59.98	31.16	155.79
8	Kalayanallur Small Tank	TN VE-06 T 0083	Chittalur	Thiagadurugam	Kallakurichi	Kallakurichi	11.05	11.33	5.59	27.97
9	Kalayanallur Tank	TN VE-06 T 0048	Kalayanallur	Thiagadurugam	Sankarapuram	Kallakurichi	11.4	10.42	6.15	27.97
10	Koothakkudi Tank &Anicut	TN VE-06 T 0156	Koothakkudi	Thiagadurugam	Kallakurichi	Kallakurichi	34.87	35.75	16.56	87.18
11	Pallagacheri Tank &Anicut	TN VE-06 T 0038	Pallagacheri	Thiagadurugam	Sankarapuram	Kallakurichi	76.78	74.88	40.02	191.68
12	Prithivimangalam	TN VE-06 T 0057	Prithivimangalam	Thiagadurugam	Kallakurichi	Kallakurichi	61.58	57.03	33.45	152.06
13	Udayanatchi Tank	TN VE-06 T 0124	Udayanatchi	Thiagadurugam	Kallakurichi	Kallakurichi	23.84	24.09	11.98	59.91
14	VadaThorasalur Tank	TN VE-06 T 0046	VadaThorasalur	Thiagadurugam	Kallakurichi	Kallakurichi	20.37	19.36	11.2	50.93
15	Kudiyanallur Tank	TN VE-06 T 0102	Kudiyanallur	Thiagadurugam	Kallakurichi	Kallakurichi	23.38	21.19	11.14	55.71
16	Ninaiyur Tank	TN VE-06 T 0126	Ninnaiyur	Thiagadurugam	Kallakurichi	Kallakurichi	19.87	19.39	9.82	49.08

17	Sithathur Tank	TN VE-06 T 0122	Sithathur	Thiasgaduruga m	Kallakurichi	Kallakurichi	19.93	18.95	9.72	48.6
18	Thiyagai Tank	TN VE-06 T 0079	Thyiyagai	Thiagadurugam	Kallakurichi	Kallakurichi	21.89	21.08	11.08	54.05
19	Udamampattu Tank	TN VE-06 T 0051	Udayampattu	Thiagadurugam	Kallakurichi	Kallakurichi	18.44	18.9	8.76	46.1
	CLUSTER III									
20	Chellampattu Tank &Anicut	TN VE-06 T 0020	Chellampattu	Sankarapuram	Sankarapuram	Kallakurichi	22.02	21.2	10.47	53.69
21	Kosapadi Tank	TN VE-06 T 0014	Kosapadi	Sankarapuram	Sankarapuram	Kallakurichi	23.29	23.6	12.84	59.73
22	Manjaputtur Tank	TN VE-06 T 0022	Manjaputtur	Sankarapuram	Sankarapuram	Kallakurichi	36.14	37.06	18.30	91.5
23	Pandalam Tank &Anicut	TN VE-06 T 0001	Pandalam	Sankarapuram	Sankarapuram	Kallakurichi	63.68	60.61	29.15	153.44
24	Poikunam Tank	TN VE-06 T 0018	Poikunam	Sankarapuram	Sankarapuram	Kallakurichi	16.65	16.4	8.26	41.31
25	Pootai Tank &Anicut	TN VE-06 T 0003	Pootai	Sankarapuram	Sankarapuram	Kallakurichi	55.28	54.8	30.37	140.45
26	Sembarampattu Tank	TN VE-06 T 0011	Sembarampattu	Sankarapuram	Sankarapuram	Kallakurichi	17.63	18.07	8.37	44.07

27	Urangani Tank	TN VE-06 T 0007	Urangani	Sankarapuram	Sankarapuram	Kallakurichi	35.36	36.79	16.92	89.07
28	Vadachettiyandal	TN VE-06 T 0019	Vadachettiyandal	Sankarapuram	Sankarapuram	Kallakurichi	19.2	18.38	10.60	48.18
29	PanaiyankaalAnicut	-	Panaiyankaal	Sankarapuram	Kallakurichi	Kallakurichi	20.67	17.64	10.19	48.5
30	SeshasamuthiramAnicut	-	Seshasamuthiram	Sankarapuram	Sankarapuram	Kallakurichi	4.38	4.12	3.65	12.15
	CLUSTER IV									
31	Kallerikuppam Tank	TN VE-06 T 0025	Kallaerikuppam	Rishivanthiyam	Sankarapuram	Kallakurichi	5.7	4.95	3.00	13.65
32	PalayaSiruvangurPeriyaeri	TN VE-06 T 0026	Palayam	Rishivanthiyam	Sankarapuram	Kallakurichi	21.55	20.84	11.61	54
33	PalayaKorakachandal tank	TN VE-06 T 0027	Palayakorakachanda	Rishivanthiyam	Sankarapuram	Kallakurichi	1.95	1.99	0.95	4.89
34	Pallipattu	TN VE-06 T 0030	Pallipattu	Rishivanthiyam	Sankarapuram	Kallakurichi	8.67	8.77	4.23	21.67
35	Velanmandal Tank	TN VE-06 T 0032	Velanmandal	Rishivanthiyam	Sankarapuram	Kallakurichi	9.6	9.12	5.28	24

	CLUSTER V									
36	Kacharayapalayam Tank	TN VE-06 T 0042	Kacharayapalayam	Chinnaselam	Kallakurichi	Kallakurichi	35.95	36.40	17.53	89.88
37	VadakanandalKalleri Tank	TN VE-06 T 0034	Vadakanandal	Chinnasalem	Kallakurichi	Kallakurichi	43.36	43.76	21.68	108.80
	Total ayacut area of Tank						**1210.67**	**949.95**	**509.28**	**2669.9**
	Total ayacut area of Anicut						**64.60**	**61.70**	**33.95**	**160.25**
	Total ayacut area						**1275.27**	**1011.65**	**543.23**	**2830.15**

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1.7. CONCLUSION:

In Manimukthanadhi subbasin, there are 47 tankslies in which 13 tanks already executed and remaining 34 tanks to be taken up forRehabilitation and Modernisation under TNIAMP Phase III. In Manimukthanadhi sub basin,there are 18 anicuts lies, in which 8 anicuts already executed and remaining 10 anicuts to be taken up under TNIAMP Phase III. In Manimukthanadhi sub basin, there are 47 Non system tank supply channels and 3 Anicut supply channels are available which has total length of 115.41Km. Out of total length 115.41 km, desilting is required for the length of 40.15 Km is now proposed under TNIAMP Phase III with an ayacut of **2830.15 Ha.**

Based on the norms and guidelines as specified by Mr.R.K.Malhotra, World Bank Consultant, the Detailed Project Report has been prepared including provisions for WRD cost, On Farm Development works, Labour Welfare fund @ 1%, GST @ 12%, Petty Supervision charges, charges for Contingencies & unforeseen items, advertisement charges, Photographic charges and documentation charges @ 2.5% and Environmental component and ground water component. The Detailed Project report has been prepared based on current schedule of rates for the year 2020-21 pertaining to Kallakurichi District and works out to Rs. 1344.00lakhs.

The proposed rehabilitation for 34 tanks and 10 anicuts in TNIAMP Phase –III , will surely help to bridge the gap between the future projected water demand of Irrigation and the water potential available in the sub basin. The rehabilitated Irrigation tanks will certainly increase the agriculture productivity and also more ayacut areas will be covered and irrigated by conjuctive use of both Surface and Ground water.

The expenditure of the above work is chargeable to the head of Account **"4701 – Major works –PHASE III -TNIAMP Project".**

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2. HYDROLOGY OF THE SUB BASIN

Hydrology of Sub Basin

2.1.Location

The Manimuktha sub basin is one of the subbasins in Vellar basin and spreads in Kallakurichi districtof Tamil Nadu. The Manimuktha sub basin is surrounded by Gomukhi Sub Basin in the West, Pennaiyar basin in the North and East, Lower vellar Basin in the South.

The total area of the Vellar basin is 7504.35 sq.km. The Vellar Basin is divided into Upper vellar Sub basin (1820.36sq.km), Lower vellar Sub basin (1756.20sq.km),Gomukhi Sub basin (1147.23sq.km), Chinnar Sub basin (649.68sq.km), SwethaNadhi Sub basin (1042.89sq.km),Anaivari Odai Sub basin (340.45sq.km) and ManimukthaNadhi sub basin (749.54sq.km)

2.2. Geomorphology

The ManimukthaNadhi Sub Basin area is 749.54Sq.Km which is around 9.96% of total basin area.The geomorphic features are pediplain in the North West and Northen part of the basin whereas theTeritary Uplands covers the Eastern portion & part of the middle portion of the basin Alluvial palin covers the southern portion of basin.

2.3.Demography

Sl No	Sub Basin	Area Sq.km	Total Population	Density Person / Sq.km
1	ManimukthaNadhi	749.54	180583	240.92

***Data as per Revenue Record.**

2.4.Geology

The ManimukthaNadhi sub basin is formed with crystalline rock of Archaeon age consisting of Charnokites,fissile hornblende gneiss, hornblende biotite gneiss, pink granite and ultrabasic rocksare present in this area.The depth of dug wells and water table ranges from 15 to 20 m and 8 to 18 m respectively.

2.5. Land use Classification:

The most predominant land use found is Agricultural with an aerial extent of 81 per cent of the total area. Water bodies and wastelands identified to covering about 7 per cent and4 per cent respectively.

Paddy, Sugarcane, Groundnut, etc. are the major crops grown in the Sub Basin.

2.6.Ground water potential

In general ground water potiential is good.

Sl. No.	Name of Block	Block Area falling in the project area of the sub basin Sq.Km	% block area falling in the project area of the sub basin	Total Potential in project area ofsub basin (MCM)	Net Potential in project area of sub basin (MCM)	Categorisation of Block (2009)	**Categorisation of Block as per G.O** (M.s) No.161, P.W (R2) Dept, dt 23.10.2019
1	Kallakurichi	119.90	16.04	13.30	2.13	Semi Critical	Semi Critical
2	Chinnasalem	43.98	5.88	14.82	0.87	Critical	Semi Critical
3	Sankarapuram	197.91	26.47	53.33	14.12	Safe	Safe
4	Rishivanthiyam	100.21	13.40	37.90	5.08	Safe	Safe
5	Thiyagadurugam	285.57	38.20	77.41	29.57	Over Exploited	Over Exploited
	Total			**196.76**	**51.77**		

***Data from Ground Water Division, PWD. Cuddalore.**

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2.7. Gauging stations in CWC & PWD

There is no CWC gauging station& one PWD gauging station located in ManimukthaNadhi Reservoir of ManimukthaNadhi sub basin.

2.8. Surface water potential

The sub basin surface water potential (in M.cum) is calculated (with 75% dependability) as follows:

	SW monsoon	NE monsoon	Non monsoon Period	Total
ManimukthaNadhi	27.00	58.00	18.82	103.82

***Data from IWS- Chennai.**

2.9. Level of ground water analysis through observation wells

The classification of blocks in ManimukthaNadhi sub basin based on the level of Ground Water Development is given below.

Sl. No.	Block	District	Categorisation of Block (2013)(M.s) No.257, P.W (R2) Dept, dt01.10.2018	Categorisation of Block (2017) (M.s) No.161, P.W (R2) Dept, dt 23.10.2019
1	Kallakurichi	Kallakurichi	Semi Critical	Semi Critical
2	Chinnasalem		Critical	Semi Critical
3	Sankarapuram		Safe	Safe
4	Rishivanthiyam		Safe	Safe
5	Thiyagadurugam		Over Exploited	Over Exploited

2.10. Industrial water demand (Past and Future)of ManimukthaNadhi sub basin

The annual water demand for the industries during planning periods for sub basin is given below.

S.No.	Year	Annual Water demand in M.Cum
1	2015	0.924
2	2020	0.929
3	2030	2.765
4	2040	3.687

***Data from Vellar Basin Micro Level Study Book**

2.11.Domestic water demand (Past & future) details

The domestic water demand is expected to increase by nearly 59% in 2045. Due to rapid urbanization and increase in population, the water demands in domestic, agricultural and industrial sectors have gone very high. But, the available potential of both surface and groundwater is not sufficient to meet the requirements. There is some short fall.

ManimukthaNadhi Sub Basin	2011	2020	2030	2040	2050
Population in Million	0.11	0.12	0.13	0.14	0.16
Total Water demand in Mcum	1.61	1.76	1.90	2.05	2.34

***Data from VellarBasin Micro Level Study Book**

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2.12. Live stock population and annual Water demand

ManimukthaNadhi Sub Basin

Live Stock Name	Standard Norms in lpcd	Nos	Annual Water Demand M.cum
Cattle	110	41232	1.660
Buffaloes	150	557	0.031
Sheep	20	3873	0.028
Goat	20	16091	0.118
Poultry	0.25	17211	0.002
Total Annual Water Requirement in Mcum			**1.839**

***Data from Animal Husbandry Department, Kallakurichi.**

2.13. Rainfall & Rain gauge stations in the sub basin:-

Name of Rain Gauge Station	Taluk	District	Latitude	Longitude	RG station area sq.km	Sub basin area sq.km	Annual average rainfall in mm	Annual average weighted rain fall for the sub basin in mm	NE Mon soon	SW mon soon	Winter	Summer	Annual
Manimuktha NadhiReservoir	Sankarapuram	Kallakurichi	11° 48' 14"	78° 59' 23"	478.72	747.57	1767.0	1767.00	1124.0	332.0	192.0	119.0	1767.0

*Data from Rain fall Record, P.W.D.,WRD.,Kallakurichi.

2.14.Soil Classification

The entire sub basin is formed with crystalline rock ofArchaeon age consisting of Charnokites, fissile hornblende gneiss, hornblende biotite gneiss, pink granite and ultrabasic rocks are present in this area.

Charnokites Gneiss	Common and widely distributed type of metamorphicrock. Gneiss is formed by high temperature and high-pressure metamorphicprocesses acting on formations composed of igneous or sedimentary rocks. Orthogenesis is gneiss derived from igneous rock
Biotite	Used for a large group of black mica minerals that is commonly found in igneous and metamorphic rocks. These include annite, phlogopite, siderophyllite, fluorophlogopite, fluorannite, eastonite, and many others.

***Data from Ground Water Division, PWD, Cuddalore.**

2.15. Land Holdings

The details of farm holdings and size classes prevalent in ManimukthaNadhi Sub basin are given below

Category	Size of holdings	Numbers	Percentage
Marginal	Below 1.00 Ha	10245	60.75
Small	1.00 – 2.00 Ha	5510	32.68
Medium	2.00 – 5.00 Ha	985	5.84
Big	5.0 ha & above	123	0.73
Total		16863	100.00

***Data as per the Revenue Record.**

Above table revealed that the marginal farmers alone accounted for 60.75 percent in the sub basin followed by small farmers. Developmental initiatives will need to take the fact into account.

2.16. CROP WATER REQUIREMENT

(CROPPING PATTERN)

Name of the sub Basin : **Manimukthanadhi**
Nodal District : Viluppuram
Registered Ayacut Area : **2830.15**

Fully Irrigated : 1275.27 Ha
Partially Irrigated :1011.65 Ha
Gap : 543.23 Ha

Total Ayacut Area : **2830.15** Ha

No. of WUAs :

S. No.	Crop	Without Project				With Project				Increasing
		FI	PI	RF/G	TOTAL	FI	PI	RF/G	TOTAL	
I	**Perennial crop**									
1	Coconut	0	0	0	**0**	0	0	0	**0**	0
2	Mango	0	0	0	**0**	0	0	0	**0**	0
3	Guava	0	0	0	**0**	0	0	0	**0**	0
4	Casuarina	0	0	0	**0**	0	0	0	**0**	0
5	Fodder crops	10	0	0	**10**	44	0	0	**44**	34
	Total	10	0	0	**10**	44	0	0	**44**	34
II	**Annual Crop**				**0**				**0**	0
1	Sugarcane	152	0	0	**152**	95	0	0	**95**	-57
2	Banana	0	0	0	**0**	0	0	0	**0**	0
3	Tapiaco	85	0	0	**85**	250	0	0	**250**	165
	Total	237	0	0	237	345	0	0	345	108
III	**1st crop**									
1. a	Paddy	886.27	0	0	**886.27**	131	0	0	**131**	-755.27
b	Paddy – SRI	85	0	0	**85**	710	0	0	**710**	625
2	Maize	0	255	0	**255**	345	0	0	**345**	90
3	Ragi	0	131	0	**131**	173	0	0	**173**	42
4	Minor Millets	0	82	0	**82**	120	0	0	**120**	38
5	Pulses	0	363.65	0	**363.65**	514.15	0	0	**514.15**	164.56
6	Groundnut	0	135	0	**135**	179	0	0	**179**	44
7	Gingelly	0	45	0	**45**	62	0	0	**62**	17
8	Bhendi	21	0	0	**21**	51	0	0	**51**	30
9	Brinjal	5	0	0	**5**	15	0	0	**15**	10
10	Chillies (Green)	10	0	0	**10**	20	0	0	**20**	10
11	Snake gourd	5	0	0	**5**	20	0	0	**20**	15
12	Bitter gourd	1	0	0	**1**	16	0	0	**16**	15
13	Small Onion	10	0	0	**10**	65	0	0	**65**	55
14	Watermelon	5	0	0	**5**	20	0	0	**20**	15
15	Fallow	0	0	543.23	**543.23**	0	0	0	**0**	-543.23
16	Non Agrl. Purposes	0	0		**0**	0	0	0	**0**	0
	Total	1028.27	1011.65	543.23	2583.15	2441.15	0	0	2441.15	-142
	G. Total (I+II+III)	1275.27	1011.65	543.23	2830.15	2830.15	0	0	2830.15	0

IV	**2 nd crop**				**0**				**0**	0
1. a	Paddy	210	0	0	**210**	110	0	0	**110**	-100
b	Paddy – SRI	65	0	0	**65**	485	0	0	**485**	420
2	Maize	0	0	0	**0**	0	0	0	**0**	0
3	Ragi	0	0	0	**0**	0	0	0	**0**	0
4	Minor Millets	0	0	0	**0**	0	0	0	**0**	0
5	Pulses	0	155	0	**155**	316	0	0	**316**	161
6	Groundnut	0	0	0	**0**	0	0	0	**0**	0
	Total	**275**	**155**	**0**	**430**	**911**	**0**	**0**	**911**	481
V	**3rd crop**				**0**				**0**	0
1. a	Paddy	205	0	0	**205**	95	0	0	**95**	-110
b	Paddy – SRI	55	0	0	**55**	463	0	0	**463**	408
2	Maize	0	0	0	**0**	0	0	0	**0**	0
3	Ragi	0	0	0	**0**	0	0	0	**0**	0
4	Minor Millets	0	0	0	**0**	0	0	0	**0**	0
5	Pulses	0	0	0	**0**	0	0	0	**0**	0
6	Groundnut	0	0	0	**0**	0	0	0	**0**	0
	Total	260	**0**	**0**	**260**	**558**	**0**	**0**	**558**	298
	Grand Total	**1810.27**	**1166.65**	**543.23**	**3520.15**	**4299.15**	**0**	**0**	**4299.15**	779
	Cropping Intensity				**146%**				**178%**	32%

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KALLAKURICHI

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2.16. CROP WATER REQUIREMENT

(CROPPING PATTERN)

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I	**Perennial crop**									
1	Coconut	0	0	0	**0**	0	0	0	**0**	0
2	Mango	0	0	0	**0**	0	0	0	**0**	0
3	Guava	0	0	0	**0**	0	0	0	**0**	0
4	Casuarina	0	0	0	**0**	0	0	0	**0**	0
5	Fodder crops	10	0	0	**10**	44	0	0	**44**	34
	Total	**10**	**0**	**0**	**10**	**44**	**0**	**0**	**44**	34
II	**Annual Crop**				**0**				**0**	0
1	Sugarcane	152	0	0	**152**	95	0	0	**95**	-57
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10	Chillies (Green)	10	0	0	**10**	20	0	0	**20**	10
11	Snake gourd	5	0	0	**5**	20	0	0	**20**	15
12	Bitter gourd	1	0	0	**1**	16	0	0	**16**	15
13	Small Onion	10	0	0	**10**	65	0	0	**65**	55
14	Watermelon	5	0	0	**5**	20	0	0	**20**	15
15	Fallow	0	0	543.23	**543.23**	0	0	0	**0**	-543.23
16	Non Agrl. Purposes	0	0		**0**	0	0	0	**0**	0
	Total	**1028.27**	**1011.65**	**543.23**	**2583.15**	**2441.15**	**0**	**0**	**2441.15**	-142
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2	Maize	0	0	0	**0**	0	0	0	**0**	0
3	Ragi	0	0	0	**0**	0	0	0	**0**	0
4	Minor Millets	0	0	0	**0**	0	0	0	**0**	0
5	Pulses	0	155	0	**155**	316	0	0	**316**	161
6	Groundnut	0	0	0	**0**	0	0	0	**0**	0
	Total	**275**	**155**	**0**	**430**	**911**	**0**	**0**	**911**	481
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2	Maize	0	0	0	**0**	0	0	0	**0**	0
3	Ragi	0	0	0	**0**	0	0	0	**0**	0
4	Minor Millets	0	0	0	**0**	0	0	0	**0**	0
5	Pulses	0	0	0	**0**	0	0	0	**0**	0
6	Groundnut	0	0	0	**0**	0	0	0	**0**	0
	Total	**260**	**0**	**0**	**260**	**558**	**0**	**0**	**558**	298
	Grand Total	**1810.27**	**1166.65**	**543.23**	**3520.15**	**4299.15**	**0**	**0**	**4299.15**	779
	Cropping Intensity				**146%**				**178%**	32%

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ManimukthaNadhi sub-basin

2.17.1 Crop water requirement without Project

S.No	Name of Crop	Crop Area in Ha	Crop Water Requirement in MM	Crop Water Requirement in MCM	Irigation Water requirement at source Eff=32%	Total Irigation requirement in MCM
I	**Perennial crop**					
1	Fodder crops	10	350	0.04	0.13	0.13
	Total	10		0.04	0.13	0.13
II	**Annual Crop**					
1	Sugarcane	152	1710	2.6	8.13	8.13
2	Tapiaco	85	450	0.38	1.19	1.19
	Total	237		2.98	9.32	9.32
III	**1st crop**					
1. a	Paddy	886.27	1100	9.75	30.47	30.47
b	Paddy - SRI	85	700	0.6	1.88	1.88
2	Maize	255	650	1.66	5.19	5.19
3	Ragi	131	450	0.59	1.84	1.84
4	Minor Millets	82	550	0.45	1.41	1.41
5	Pulses	363.65	500	1.82	5.69	5.69
6	Groundnut	135	425	0.57	1.78	1.78
7	Gingelly	45	375	0.17	0.53	0.53
8	Bhendi	21	350	0.07	0.22	0.22
9	Brinjal	5	350	0.02	0.06	0.06
10	Chillies (Green)	10	500	0.05	0.16	0.16
11	Snake gourd	5	150	0.01	0.03	0.03
12	Bitter gourd	1	150	0	0	0
13	Small Onion	10	475	0.05	0.16	0.16
14	Watermelon	5	140	0.01	0.03	0.03
15	Fallow	543.23	46	0.25	0.78	0.78
	Total	2583.15		16.07	50.23	50.23
	G. Total (I+II+III)	2830.15				

IV	**2 nd crop**					
1. a	Paddy	**210**	**1100**	**2.31**	**7.22**	**7.22**
b	Paddy - SRI	**65**	**700**	**0.46**	**1.44**	**1.44**
2	Pulses	**155**	**500**	**0.78**	**2.44**	**2.44**
	Total	**430**		**3.55**	**11.1**	**11.1**
V	**3rd crop**					
1. a	Paddy	**205**	**1100**	**2.26**	**7.06**	**7.06**
b	Paddy - SRI	**55**	**700**	**0.39**	**1.22**	**1.22**
	Total	**260**		**2.65**	**8.28**	**8.28**
	Grand Total	**3520.15**		**25.29**	**79.06**	**79.06**

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2.17.2 Crop water requirement with Project

S.No	Name of Crop	Crop Area in Ha	Crop Water Requirement in MM	Crop Water Requirement in MCM	Irigation Water requirement at source Eff=42%	Total Irigation requirement in MCM
I	**Perennial crop**					
1	Fodder crops	44	350	0.15	0.36	0.36
	Total	44		0.15	0.36	0.36
II	**Annual Crop**					
1	Sugarcane	95	1710	1.62	3.86	3.86
2	Tapiaco	250	450	1.13	2.69	2.69
	Total	345		2.75	6.55	6.55
III	**1st crop**					
1. a	Paddy	131	1100	1.44	3.43	3.43
b	Paddy - SRI	710	700	4.97	11.83	11.83
2	Maize	345	650	2.24	5.33	5.33
3	Ragi	173	450	0.78	1.86	1.86
4	Minor Millets	120	550	0.66	1.57	1.57
5	Pulses	514.15	500	2.57	6.12	6.12
6	Groundnut	179	425	0.76	1.81	1.81
7	Gingelly	62	375	0.23	0.55	0.55
8	Bhendi	51	350	0.18	0.43	0.43
9	Brinjal	15	350	0.05	0.12	0.12
10	Chillies (Green)	20	500	0.1	0.24	0.24
11	Snake gourd	20	150	0.03	0.07	0.07
12	Bitter gourd	16	150	0.02	0.05	0.05
13	Small Onion	65	475	0.31	0.74	0.74
14	Watermelon	20	140	0.03	0.07	0.07
15	Fallow	0			0	0
	Total	2441.15		14.44	34.22	34.22
	G. Total (I+II+III)	2830.15				

IV	2 nd crop					
1. a	Paddy	110	1100	1.21	2.88	2.88
b	Paddy - SRI	485	700	3.4	8.1	8.1
2	Pulses	316	500	1.58	3.76	3.76
	Total	911		6.19	14.74	14.74
V	3rd crop					
1. a	Paddy	95	1100	1.05	2.5	2.5
b	Paddy - SRI	463	700	3.24	7.71	7.71
	Total	558		4.29	10.21	10.21
	Grand Total	4299.15		27.82	66.08	66.08

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2.18 WATER BALANCE STATEMENT

Details	Without Project In Mcm	With Project In Mcm
Water Potential		
Surface Water Potential	103.82	103.82
Ground Water Potential	51.77	51.77
Total Potential	155.59	155.59
Water Demand		
Domestic	1.90	1.90
Livestock	1.84	1.84
Industrial	2.77	2.77
Irrigation : WRO	79.06	66.08
: PU & GW	-	-
Total Water Demand	85.57	72.59
Water Balance	70.02	80.00

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3.HYDRAULIC PARTICULARS OF THE COMPONENTS

3.1 HYDRAULIC PARTICULARS OF TANKS (Non System) INCLUDING SUPPLY CHANNELS

MANIMUKTHA NADHI SUB BASIN

Annexure A

3.1 HYDRAULIC PARTICULARS OF TANKS (Non System) INCLUDING SUPPLY CHANNELS

Sl.No.	District	Taluk	Block	Name of Tank	System Tank / Non System Tank	Tank Unicode	Ayacut (ha)	Capacity (Mcft)	Number of Fillings	Free Catchment (sqkm)	Combined Catchment (sqkm)	Water Spread Area (sqkm)	No.of Sluices	Deepest Sluice Sill level (m)	FTL (m)	MWL (m)	TBL (m)	Storage Depth (m)	Free Board	No of Weir	Weir Length "M"	Dischage (Cusecs)	Length of Bund (m)	Height of Bund (m)	Length of Supply Channel (m)	Bed Width (m)	Upper Tank	Lower Tank	Remarks
1	2	3	4	5	6	6A	7	8	9	10	11	12	13	13A	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Cluster 1																													
1	Kallakurichi	Kallakurichi	Kallakurichi	Peruvangur Tank	Non System	TN VE-06 T 0054	57.95	0.15	1	1.13	5.62	17.60	3	116.27	118.87	119.47	120.47	2.60	1.00	1	30	837.90	875	4.20	2100	3.00			
2	Kallakurichi	Sankarapuram	Kallakurichi	Thandalai Tank	Non System	TN VE-06 T 0041	127.89	0.15	1	2.04	7.03	16.80	2	116.17	118.87	119.47	120.47	2.70	1.00	1	34.85	973.36	985	4.30	2500	3.00			

Sl.No.	District	Taluk	Block	Name of Tank	System Tank / Non System Tank	Tank Unicode	Ayacut (ha)	Capacity (Mcft)	Number of Fillings	Free Catchment (sqkm)	Combined Catchment (sqkm)	Water Spread Area (sqkm)	No.of Sluices	Deepest Sluice Sill level (m)	FTL (m)	MWL (m)	TBL (m)	Storage Depth (m)	Free Board	No of Weir	Weir Length "M"	Discharge (Cusecs)	Length of Bund (m)	Height of Bund (m)	Length of Supply Channel (m)	Bed Width (m)	Upper Tank	Lower Tank	Remarks
3	Kallakurichi	Sankarapuram	Kallakurichi	Thirukkananguri Tank	Non System	TN VE-06 T 0031	120.24	0.21	1	0.87	3.87	26.00	2	143.90	146.30	146.90	147.90	2.40	1.00	1	23.4	653.56	1800	4.00	1600	3.00	-	-	
4	Kallakurichi	Sankarapuram	Kallakurichi	Ka.Alambalam Tank	Non System	TN VE-06 T 0037	93.78	0.22	1	2.14	6.19	32.00	3	144.20	146.30	146.90	147.90	2.10	1.00	1	32	893.76	2281	3.70	1050*	3.00	-	-	
5	Kallakurichi	Sankarapuram	Kallakurichi	Alathur Tank	Non System	TNVE-06-T0035	312.95	0.49	1	15.62	88.07	52.00	3	135.47	138.07	138.67	140.17	2.85	1.50	5	30.00, 35.00, 40.00, 25.00, 57.90	5248.05	5015	4.95	9600	3.00	-	-	
Cluster 2																													
6	Kallakurichi	Kallakurichi	Thiagadurugam	Chittalur Tank	Non System	TN VE-06 T 0083	155.79	0.32	1	1.04	4.53	34.00	2	93.52	96.32	96.92	97.92	2.80	1.00	1	26	726.18	1800	4.40	6300	3.00	-	-	

Sl.No.	7	8	9	10
District	Kallakurichi	Kallakurichi	Kallakurichi	Kallakurichi
Taluk	Sankarapuram	Sankarapuram	Kallakurichi	Kallakurichi
Block	Thiagadurugam	Thiagadurugam	Thiagadurugam	Thiagadurugam
Name of Tank	Kalayanallur Small Tank	Kalayanallur Tank	Kudiyanallur Tank	Koothakkudi Tank
System Tank / Non System Tank	Non System	Non System	Non System	Non System
Tank Unicode	TN VE-06 T 0048	TN VE-06 T 0040	TN VE-06 T 0102	TN VE-06 T 0156
Ayacut (ha)	27.97	27.97	55.71	87.18
Capacity (Mcft)	0.29	0.29	0.33	0.47
Number of Fillings	1	1	1	1
Free Catchment (sqkm)	0.00	0.12	1.22	1.11
Combined Catchment (sqkm)	0.92	1.08	4.27	4.27
Water Spread Area (sqkm)	37.75	24.30	35.00	52.10
No.of Sluices	1	1	2	3
Deepest Sluice Sill level (m)	112.50	112.81	85.59	69.54
FTL (m)	114.60	115.21	88.39	72.24
MWL (m)	115.20	115.81	88.99	72.84
TBL (m)	116.20	116.81	89.99	73.84
Storage Depth (m)	2.10	2.40	2.80	2.70
Free Board	1.00	1.00	1.00	1.00
No of Weir	1	1	1	1
Weir Length "M"	9	10	25	25
Discharge (Cusecs)	251.37	279.30	698.25	698.25
Length of Bund (m)	760	1150	1400	2200
Height of Bund (m)	3.70	4.00	4.40	4.30
Length of Supply Channel (m)	6000*	1500*	1000	2600
Bed Width (m)	3.00	3.00	3.00	3.00
Upper Tank	-	-	-	-
Lower Tank	-	-	-	-
Remarks				

Sl.No.	District	Taluk	Block	Name of Tank	System Tank / Non System Tank	Tank Unicode	Ayacut (ha)	Capacity (MCft)	Number of Fillings	Free Catchment (sqkm)	Combined Catchment (sqkm)	Water Spread Area (sqkm)	No of Sluices	Deepest Sluice Sill level (m)	FTL (m)	MWL (m)	TBL (m)	Storage Depth (m)	Free Board	No of Weir	Weir Length "M"	Discharge (Cusecs)	Length of Bund (m)	Height of Bund (m)	Length of Supply Channel (m)	Bed Width (m)	Upper Tank	Lower Tank	Remarks
11	Kallakurichi	Kallakurichi	Thiagadurugam	Ninnaiyur Tank	Non System	TN VE-06 T 0126	49.08	0.22	1	1.32	4.27	26.00	1	76.70	79.25	79.85	80.85	2.55	1.00	1	25	698.25	1100	4.15	-	3.00	-	-	
12	Kallakurichi	Sankarapuram	Thiagadurugam	Pallagacheri Tank	Non System	TN VE-06 T 0038	131.30	1.76	1	8.24	24.47	196.07	5	111.60	114.30	114.90	116.40	2.70	1.50	1	80	2234.40	2660	4.80	6200	3.00	-	-	
13	Kallakurichi	Kallakurichi	Thiagadurugam	Prithivimangalam	Non System	TN VE-06 T 0057	152.06	0.36	1	2.21	12.97	34.50	3	100.79	103.94	104.54	105.54	3.15	1.00	1	52.4	1463.53	1625	4.75	1200	3.00	-	-	
14	Kallakurichi	Kallakurichi	Thiagadurugam	Silthathur Tank	Non System	TN VE-06 T 0122	48.60	0.32	1	1.66	7.54	34.50	2	64.87	67.67	68.27	69.27	2.80	1.00	1	36.5	1019.45	987	4.40	2000	3.00	-	-	

Sl.No.	District	Taluk	Block	Name of Tank	System Tank / Non System Tank	Tank Unicode	Ayacut (ha)	Capacity (Mcft)	Number of Fillings	Free Catchment (sqkm)	Combined Catchment (sqkm)	Water Spread Area (sqkm)	No of Sluices	Deepest Sluice Sill level (m)	FTL (m)	MWL (m)	TBL (m)	Storage Depth (m)	Free Board	No of Weir	Weir Length "M"	Discharge (Cusecs)	Length of Bund (m)	Height of Bund (m)	Length of Supply Channel (m)	Bed Width (m)	Upper Tank	Lower Tank	Remarks
15	Kallakurichi	Kallakurichi	Thiagadurugam	Thyiyagai Tank	Non System	TN VE-06 T 0079	54.05	0.18	1	6.32	22.21	26.00	1	95.44	97.54	98.14	99.14	2.10	1.00	1	75	2094.75	1100	3.70	1600	3.00	-	-	
16	Kallakurichi	Kallakurichi	Thiagadurugam	Udayamampattu Tank	Non System	TN VE-06 T 0051	46.10	0.20	1	3.06	12.09	25.60	1	111.90	114.30	114.90	115.90	2.40	1.00	1	50	1396.50	1300	4.00	750	3.00	-	-	
17	Kallakurichi	Kallakurichi	Thiagadurugam	Udayanatchi Tank	Non System	TN VE-06 T 0124	59.91	0.29	1	0.98	3.77	32.10	2	73.50	76.20	76.80	78.30	2.70	1.50	1	23	642.39	750	4.80	1200	3.00	-	-	
18	Kallakurichi	Kallakurichi	Thiagadurugam	VadaThorasalur Tank	Non System	TN VE-06 T 0046	50.93	0.20	1	0.82	3.06	32.10	2	113.01	114.91	115.51	116.51	1.90	1.00	1	20	558.60	2200	3.50	-	3.00	-	-	

Sl.No:	District	Taluk	Block	Name of Tank	System Tank / Non System Tank	Tank Unicode	Ayacut (ha)	Capacity (Mcft)	Number of Fillings	Free Catchment (sqkm)	Combined Catchment (sqkm)	Water Spread Area (sqkm)	No.of Sluices	Deepest Sluice Sill level (m)	FTL (m)	MWL (m)	TBL (m)	Storage Depth (m)	Free Board	No of Weir	Weir Length "M"	Discharge (Cusecs)	Length of Bund (m)	Height of Bund (m)	Length of Supply Channel (m)	Bed Width (m)	Upper Tank	Lower Tank	Remarks
Cluster III																													
19	Kallakurichi	Sankarapuram	Sankarapuram	Chellampattu Tank	Non System	TN VE-06 T 0020	53.69	0.32	1	0.93	3.06	36.16	1	166.14	168.24	168.84	169.84	2.10	1.00	1	20	558.60	1200	3.70	1800*	3.00	-	-	
20	Kallakurichi	Sankarapuram	Sankarapuram	Kosapadi Tank	Non System	TN VE-06 T 0014	59.73	0.28	1	1.03	3.17	61.00	2	181.50	184.40	185.00	186.00	2.90	1.00	2	20.51	572.57	1150	4.50	4500*	3.00	-	-	
21	Kallakurichi	Sankarapuram	Sankarapuram	Manjaputtur Tank	Non System	TN VE-06 T 0022	91.50	0.73	1	1.84	7.95	73.89	3	138.12	141.42	142.02	143.02	3.30	1.00	2	20,17.8.	1055.75	1100	4.90	3500*	3.00	-	-	
22	Kallakurichi	Sankarapuram	Sankarapuram	Pandalam Tank	Non System	TN VE-06 T 0001	153.44	1.15	1	2.04	8.94	90.27	4	138.92	141.52	142.12	143.12	2.60	1.00	2	40.9	1142.34	1400	4.20	2820*	3.00	-	-	

Sl.No.	District	Taluk	Block	Name of Tank	System Tank / Non System Tank	Tank Unicode	Ayacut (ha)	Capacity (MCft)	Number of Fillings	Free Catchment (sqkm)	Combined Catchment (sqkm)	Water Spread Area (sqkm)	No.of Sluices	Deepest Sluice Sill level (m)	FTL (m)	MWL (m)	TBL (m)	Storage Depth (m)	Free Board	No of Weir	Weir Length "M"	Discharge (Cusecs)	Length of Bund (m)	Height of Bund (m)	Length of Supply Channel (m)	Bed Width (m)	Upper Tank	Lower Tank	Remarks
23	Kallakurichi	Sankarapuram	Sankarapuram	Poikunam Tank	Non System	TN VE-06 T 0018	41.31	0.24	1	1.10	3.06	60.72	2	165.86	169.16	169.76	170.76	3.30	1.00	2	20,8	558.60	1050	4.90	3000*	3.00	-	-	
24	Kallakurichi	Sankarapuram	Sankarapuram	Pootai Tank	Non System	TN VE-06 T 0003	112.96	0.38	1	2.27	10.32	41.44	2	173.78	176.78	177.38	178.38	3.00	1.00	1	20,25	1256.85	1080	4.60	1200*	3.00	-	-	
25	Kallakurichi	Sankarapuram	Sankarapuram	Sembarampattu Tank	Non System	TN VE-06 T 0011	44.07	0.20	1	2.41	5.62	31.62	2	169.30	171.90	172.50	173.50	3.60	1.00	2	16,14	837.90	1200	5.20	1500*	3.00	-	-	
26	Kallakurichi	Sankarapuram	Sankarapuram	Urangani Tank	Non System	TN VE-06 T 0007	89.07	0.33	1	3.16	11.37	41.60	2	165.23	167.33	167.93	168.93	2.10	1.00	2	28,20	1340.64	1100	3.70	3000*	3.00	-	-	

Sl.No.	District	Taluk	Block	Name of Tank	System Tank / Non System Tank	Tank Unicode	Ayacut (ha)	Capacity (MCft)	Number of Fillings	Free Catchment (sqkm)	Combined Catchment (sqkm)	Water Spread Area (sqkm)	No.of Sluices	Deepest Sluice Sill level (m)	FTL (m)	MWL (m)	TBL (m)	Storage Depth (m)	Free Board	No of Weir	Weir Length "M"	Discharge (Cusecs)	Length of Bund (m)	Height of Bund (m)	Length of Supply Channel (m)	Bed Width (m)	Upper Tank	Lower Tank	Remarks
27	Kallakurichi	Sankarapuram	Sankarapuram	Vadachettiyandal	Non System	TN VE-06 T 0019	48.18	0.18	1	1.06	2.29	24.80	2	144.50	146.30	146.90	147.90	1.80	1.00	2	16.5,12	460.85	1080	3.40	1850*	3.00	-	-	
Cluster IV																													
28	Kallakurichi	Sankarapuram	Rishivantiyam	Kallaerikuppam Tank	Non System	TN VE-06 T 0025	13.65	0.14	1	0.00	0.77	35.30	2	134.14	136.24	136.84	137.84	2.10	1.00	1	8	223.44	740	3.70	3000*	3.00	-	-	
29	Kallakurichi	Sankarapuram	Rishivantiyam	Palaya Siruvangur PeriyaEri	Non System	TN VE-06 T 0026	54.00	0.31	1	0.23	1.89	45.66	2	131.40	133.50	134.10	135.10	2.10	1.00	1	14.5	404.99	1065	3.70	600*	3.00	-	-	
30	Kallakurichi	Sankarapuram	Rishivantiyam	Palaya korakachandal Tank	Non System	TN VE-06 T 0027	4.89	0.37	1	1.13	2.68	6.74	1	133.83	135.93	136.53	137.53	2.10	1.00	1	18.3	511.12	700	3.70	600*	3.00	-	-	

Sl.No.	District	Taluk	Block	Name of Tank	System Tank / Non System Tank	Tank Unicode	Ayacut (ha)	Capacity (Mcft)	Number of Fillings	Free Catchment (sqkm)	Combined Catchment (sqkm)	Water Spread Area (sqkm)	No of Sluices	Deepest Sluice Sill level (m)	FTL (m)	MWL (m)	TBL (m)	Storage Depth (m)	Free Board	No of Weir	Weir Length "M"	Discharge (Cusecs)	Length of Bund (m)	Height of Bund (m)	Length of Supply Channel (m)	Bed Width (m)	Upper Tank	Lower Tank	Remarks
31	Kallakurichi	[illegible]	[illegible]iyam	Pallipattu Tank	Non System	TN VE-06 T 0030	21.67	0.22	1	0.08	1.08	22.31	2	125.91	128.01	128.61	129.61	2.10	1.00	1	10	279.30	1120	3.70	2500*	3.00	-	-	
32	Kallakurichi	[illegible]	[illegible]am	Velanmandal Tank	Non System	TN VE-06 T 0032	24.00	0.25	1	1.39	4.93	29.58	2	117.68	119.78	120.38	121.38	2.10	1.00	1	27.5	768.08	980	3.70	2500*	3.00	-	-	
Cluster V																													
33	Kallakurichi	Kallakurichi	[illegible]m	Kacharayapalayam Tank	Non System	TN VE-06 T 0042	89.88	0.68	1	2.67	10.67	74.50	3	157.88	160.63	161.23	162.23	2.75	1.00	1	46	1284.78	1260	4.35	3200*	3.00	-	-	
34	Kallakurichi	[illegible]	[illegible]m	Vadakanandal Kalleri Tank	Non System	TN VE-06 T 0034	108.40	0.74	1	0.12	1.99	78.90	4	163.62	166.42	167.02	168.02	2.80	1.00	1	15	418.95	1200	4.40	1000*	3.00	-	-	
Total Ayacut							**2669.90 Ha**																	**Total length- 83770**					

***Tank supply channels already executed – 45120m=45.12Km, Balance to be executed- 83770-45120= 38650m= 38.65Km**

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18.9.20

TNIAMP PHASE III MANIMUKTHA NADHI SUB BASIN

S.No	Name of Village	Name of Tank	Tank Unicode	Ayacut (Ha)
1	Kalayanallur	Kalayanallur Small Tank	TN VE-06 T 0048	27.97
2	Kalayanàllur	Kalayanallur Tank	TN VE-06 T 0040	27.97
3	Kallerikuppam	Kallerikuppam Tank	TN VE-06 T 0025	13.65
4	Palayakorakachandal	Palayakorakachandal Tank	TN VE-06 T 0027	4.89
5	Pallipattu	Pallipattu Tank	TN VE-06 T 0030	21.67
6	Velamandal	Velamandal Tank	TN VE-06 T 0032	24.00

Manimuktha Nadhi Sub basin

It is certified that,

a) In the above, tanks having ayacut less than 40 Ha are controlled and maintained by PWD/WRD, since these tanks receive water from the Anicuts through supply channel and treated as system tanks. Necessary correction will be made in the Unicode data accordingly.

a) The Ayacut for the list of tanks mentioned in Manimuktha Nadhi Sub basin DPR is correct as per Memoir and necessary measures will be taken to modify the Ayacut mentioned in Unicode database for tank in IWS accordingly .

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3.2.HYDRAULIC PARTICULARS OF THE ANICUT INCLUDING SUPPLY CHANNELS

Sl. No.	Name of Anicut	Village	Taluk	District	Ayacut in Ha	Length of Anicut (M)	Crest Level of Anicut (M)	Free Catchment Sq.M	Combined Catchment Sq.M	Maximum flood dis-charge Cusecs	Latitude	Longtitude	Head Sluice Location			Supply Channel					Remarks
													Total No. of vents	Sill Level of Sluice (m)	Disharge (Cumecs)	Length (m)	Bed width (m)	FSD (M)	Bed slope	Sluice	
1	2	3		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	KaradichithurAnicut	Karadichithur	Chinnasalem	Kallakurichi	0.00	68.00	100.00		-	8800	11° 49'29"N	78° 53' 23"E	1	98.80			3.00	0.60	1:1000		No Direct ayacut
2	KumarapalaiyamAnicut	Kumarapalaiyam	Chinnasalem		11.34	62.00	100.00		-	8800	11°50'20"N	78° 52' 47"E	1	98.8		1500	3.00	0.60	1:1000	1	Direct ayacut
3	ThavadipattuAnicut	Thavadipattu	Chinnasalem		0.00	65.00	100.00		-	8800	11° 49'29"N	78° 53' 23"E	1	98.8			3.00	0.60	1:1000	-	No Direct ayacut
4	PallakatcheriAnicut	Pallakatcheri	Sankarapuram		60.77	197	100.00		-	32700	11°48'14"	78°59'23"	1	116.75			3.00	0.60	1:1000		Direct ayacut
5	KootthakudiAnicut	PuthuUchimedu	Kallakurichi		0.00	137.00	100.00		-	32700	11° 37'45"N	79° 06' 25"E	1	98.8			3.00	0.60	1:1000		No Direct ayacut
6	PoottaiAnicut	Pootai	Sankarapuram		27.49	120.00	100.00		-	20000	1153'55"	78 52'38"	1	98.8			3.00	0.60	1:1000		Direct ayacut

Sl. No.	Name of Anicut	Village	Taluk	District	Ayacut in Ha	Length of Anicut (M)	Crest Level of Anicut (M)	Free Catchment Sq.M	Combined Catchment Sq.M	Maximum flood dis-charge Cusecs	Latitude	Longtitude	Head Sluice Location			Supply Channel					Remarks
													Total No. of vents	Sill Level of Sluice (m)	Disharge (Cumecs)	Length (m)	Bed width (m)	FSD (M)	Bed slope	Sluice	
7	PandalamAnicut	Pandalam	Sankarapuram		0.00	125.00	100.00		-	21000	12 53' 57"	78 53' 58"	1	98.8			3.00	0.60	1:1000		No Direct ayacut
8	ChellampattuAnicut	Chellampattu	Sankarapuram		0.00	30.00	100.00		-	10000	11 51'17"	8 52' 05"	1	98.8			3.00	0.60	1:1000		No Direct ayacut
9	PanaiyankaalAnicut	Panaiyankaal	Kallakurichi		48.50	197.00	100.00		-	32700	11° 43'10"N	79° 03' 02"E	1	98.8			3.00	0.60	1:1000		Direct ayacut
10	SeshasamuthiramAnicut	Seshasamuthiram	Sankarapuram		12.15	31.00	100.00		-	10000	11 50' 10"	78 52'30"	1	98.8		2500*	3.00	0.60	1:1000		Direct ayacut
			Total Ayacut		**160.25**									**Total Length**		**4000**					

*** Anicut supply channels already executed -2500m , Balance to be executed- 4000-2500= 1500 m = 1.50Km**

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4. PARTICIPATORY IRRIGATION MANAGEMENT (PIM)

4.1. SALIENT FEATURES OF IMPLEMENTATION OF PIM IN MANIMUKTHA NADHI SUBBASIN

The Sub-Basin: This is one of the 7 sub-basins of the VellarBasin. There are **34**Tanks and **10**Anicuts under the control of WRD of PWD in this sub basin. The list of Infrastructures covered with more details is furnished in the **Annexure-1**. These Infrastructures are located within the Sub-Basin's hydraulic boundary spread over 38 villages of 3 Taluks in KallakurichiDistrict.The Total Command area under these Infrastructures worksout to **2830.15** Ha. **(Annexure1).**

4.2. Command area:

Tank Ayacut (34 Tanks)	: 2669.90 ha
AnicutAyacut (10 Anicuts)	: 160.25 ha
Total Ayacuts	: 2830.15 Ha.

4.3. An Assessment of number of WUAs.

i)	WUA's are formed already in WRCP	-Nil-
ii)	The Total command area covered by the above WUAs works out to	-Nil-
iii)	WUA 'are proposed to be formed in TNIAMP project	34
iv)	The total command area proposed to be covered under TNIAMP project	2830.15 Ha

Delineation of Command area and Boundaries for WUA'S in this Sub basin is in under Progress

4.4. Assessment of Awareness creation among the farming communityActivities undertaken and "Walkthrough Survey" carried out:

1. There are 34 Tanks and 10Anicuts in the Sub-Basin spread over 38 villages as detailed out in Annexure – 01. All these Villages were visited by the WRO officials and awareness about various activities, contemplated under TN IAMP projecthas been created.

2. Details of villages covered, walkthrough surveys conducted, farmers attended, list of works suggested by the farmers, list of works analyzed and finalized by WRO officials, are all furnished in the Annexure -02 and Annexure -03:

4.5. Appointment and the Role of Competent Authorities:

1. Section 26 of the Tamil Nadu Farmer's Management of Irrigation Systems (TNFMIS) Act provides for the appointment of "Competent Authorities" to assist the respective Organiztion (WUA, Distributory Committee and Project Committee), in the Implementation and execution of all decisions taken by such farmers organization. Similarly, every farmer's organization shall extend such co-operation or assistance, as may be required by the competent Authority, for carrying out all the tasks related to implementation of TNFMIS Act.

2. Appointment of Competent Authorities for the WUAs proposed to be formed under TNIAMP project is based on the "WRO section Officer Wise" distribution as indicated below.

Name of the WRO Sub Divisional Officers working in the ManimukthaSub-Basin:

1. Vellar Basin Sub Division, Kallakurichi.

a.	Assistant Engineer, WRD,Irrigation Section, Kallakurichi.	M,M1, M,M2, M,M3, M,M4, M,M5, M,M6, M,M9, M,M10, M,M11, M,M13, M,M14, M,M15, M,M16, M,M17, M,M18.
b.	Assistant Engineer, WRD, Irrigation Section, Sankarapuram.	M,M7, M,M8, M,M19, M,M20, M,M21, M,M22, M,M23, M,M24, M,M25, M,M26, M,M27, M,M28, M,M29, M,M30, M,M31, M,M32
c	Assistant Engineer, WRD, MNP Dam, Agarakottalam.	M,M12
d	Assistant Engineer, WRD, GNP, Vadakkanandal.	M,M33, M,M34.

4.6. Involvement of farmers in the preparation of "Scheme Modernization Plans".

1. Based on the outcome of the "Awareness Creation Programme" and walkthrough survey carried out with the involvement of farmers, a list of tasks proposed to be taken up for "Modernization" under TNIAM Project was discussed with 12057 No. of farmers from 38 Villages.

2. The cost, period of contract and Name of the contractor will all be fixed at the site of work, as well as the Executive Engineer of WRO, who has been designated as the Nodal Officer for the Sub-Basin concerned.

3. The field Officers of WRO are all aware of the problems in handing over the operation and maintenance responsibilities to the farmers concerned, if the

   tasks as desired by the farmers in the command area are not included in the modernization of the system and also in case, some of the tasks already included and planned are not implemented due to some reasons or other.

4. The WRO officers were also informed that they are personally responsible for handing over the irrigation systems, under TNIAM Project.

4.7. "Capacity Building" of the WUA Farmers:

1. Training Modules required will be prepared for building the capacity of the WUA farmers, based on a "Training Needs" Analysis. They will also organize various "CapacityBuilding" programs at suitable locations within the Sub-Basin command area, to benefit the farmers of the WUAs in the Sub-Basin.

2. Organization the study tours will also be arranged both within and outside the State to enhance their knowledge and experiences which will help them to improve the crop productivity and there by the farmer's income.

3. Necessary Awareness programme and impart training will also be conducted to educate the farmers of the WUAs in all aspects of the TNFMIS Act, TNFMIS Rules and Election procedures for constituting the "Managing Committee" of the WUAs.

The "Competent Authorities" appointed for the Sub-Basin will also be trained to effectively to interact with WUA farmers and maintain good rapport and relationship with the farming community in the Sub-Basin.

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4.8. Annexure 1

AN ASSESSMENT OF COMMAND AREA AND WUAs UNDER THE CONTROL OF WRD OF PWD IN MANIMUKTHA NADHI SUB – BASIN

Sl. No	WUA No	Name of Irrigation Systems and Tanks	Command Area in (Ha)	Location of the Command Area			Coverage of Command area under different projects (Ha)		Status of formation of WUAs in the Sub-Basin	
				Villages	Taluk	District	WRCP and Others	TNIAMP	Formed under WRCP	To be formed under TNIAMP
1	2	3	4	5	6	7	8	9	10	11
1	M,M 1	Peruvangur Tank	57.95	Peruvangur	Kallakurichi	Kallakurichi	-	57.95	-	WUA To be Formed
2	M,M 2	Thandalai Tank	127.89	Thandalai	Sankarapuram	Kallakurichi	-	127.89	-	WUA To be Formed
3	M,M 3	Thirukkanangur Tank	120.24	Thirukkanangur	Sankarapuram	Kallakurichi	-	120.24	-	WUA To be Formed
4	M,M 4	Ka.Alambalam Tank	93.78	Ka.Alambalam	Sankarapuram	Kallakurichi	-	93.78	-	WUA To be Formed
5	M,M 5	Alathur Tank	312.95	Alathur	Sankarapuram	Kallakurichi	-	312.95	-	WUA To be Formed
6	M,M 6	Chittalur Tank	155.79	Chittalur	Kallakurichi	Kallakurichi	-	155.79	-	WUA To be Formed
7	M,M 7	Kalayanallur Small Tank	27.97	Kalayanallur	Sankarapuram	Kallakurichi	-	27.97	-	WUA To be Formed
8	M,M 8	Kalayanallur Tank	27.97	Kalayanallur	Sankarapuram	Kallakurichi	-	27.97	-	WUA To be Formed

9	M,M 9	Kudiyanallur Tank	55.71	Kudiyanallur	Kallakurichi	Kallakurichi	-	55.71	-	WUA To be Formed
10	M,M 10	Koothakkudi Tank	87.18	Koothakkudi	Kallakurichi	Kallakurichi	-	87.18	-	WUA To be Formed
11	M,M 11	Ninnaiyur Tank	49.08	Ninnaiyur	Kallakurichi	Kallakurichi	-	49.08	-	WUA To be Formed
12	M,M 12	Pallagacheri Tank	131.30	Pallagacheri	Sankarapuram	Kallakurichi	-	131.30	-	WUA To be Formed
13	M,M 13	Prithivimangalam	152.06	Prithivimangalam	Kallakurichi	Kallakurichi	-	152.06	-	WUA To be Formed
14	M,M 14	Sithathur Tank	48.60	Sithathur	Kallakurichi	Kallakurichi	-	48.60	-	WUA To be Formed
15	M,M 15	Thyiyagai Tank	54.05	Thyiyagai	Kallakurichi	Kallakurichi	-	54.05	-	WUA To be Formed
16	M,M 16	Udayamampattu Tank	46.10	Udayampattu	Kallakurichi	Kallakurichi	-	46.10	-	WUA To be Formed
17	M,M 17	Udayanatchi Tank	59.91	Udayanatchi	Kallakurichi	Kallakurichi	-	59.91	-	WUA To be Formed
18	M,M 18	VadaThorasalur Tank	50.93	VadaThorasalur	Kallakurichi	Kallakurichi	-	50.93	-	WUA To be Formed
19	M,M 19	Chellampattu Tank	53.69	Chellampattu	Sankarapuram	Kallakurichi	-	53.69	-	WUA To be Formed
20	M,M 20	Kosapadi Tank	59.73	Kosapadi	Sankarapuram	Kallakurichi	-	59.73	-	WUA To be Formed
21	M,M 21	Manjaputtur Tank	91.50	Manjaputtur	Sankarapuram	Kallakurichi	-	91.50	-	WUA To be Formed
22	M,M 22	Pandalam Tank	153.44	Pandalam	Sankarapuram	Kallakurichi	-	153.44	-	WUA To be Formed
23	M,M 23	Poikunam Tank	41.31	Poikunam	Sankarapuram	Kallakurichi	-	41.31	-	WUA To be Formed
24	M,M 24	Pootai Tank	112.96	Pootai	Sankarapuram	Kallakurichi	-	112.96	-	WUA To be Formed
25	M,M 25	Sembarampattu Tank	44.07	Sembarampattu	Sankarapuram	Kallakurichi	-	44.07	-	WUA To be Formed
26	M,M 26	Urangani Tank	89.07	Urangani	Sankarapuram	Kallakurichi	-	89.07	-	WUA To be Formed
27	M,M 27	Vadachettiyandal	48.18	Vadachettiyandal	Sankarapuram	Kallakurichi	-	48.18	-	WUA To be Formed
28	M,M 28	Kallaerikuppam Tank	13.65	Kallaerikuppam	Sankarapuram	Kallakurichi	-	13.65	-	WUA To be Formed

29	M,M 29	PalayaSiruvangurPeriyaEri	54.00	Palayam	Sankarapuram	Kallakurichi	-	54.00	-	WUA To be Formed
30	M,M 30	Palayakorakachandal Tank	4.89	Palayakorakachandal	Sankarapuram	Kallakurichi	-	4.89	-	WUA To be Formed
31	M,M 31	Pallipattu Tank	21.67	Pallipattu	Sankarapuram	Kallakurichi	-	21.67	-	WUA To be Formed
32	M,M 32	Velanmandal Tank	24.00	Velanmandal	Sankarapuram	Kallakurichi	-	24.00	-	WUA To be Formed
33	M,M 33	Kacharayapalayam Tank	89.88	Kacharayapalayam	Kallakurichi	Kallakurichi	-	89.88	-	WUA To be Formed
34	M,M 34	Vadakanandal Kalleri Tank	108.40	Vadakanandal	Kallakurichi	Kallakurichi	-	108.40	-	WUA To be Formed

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ABSTRACT

Proposed to be taken under TNIAMP

1.	Total command area controlled by WRD of PWD in the Sub Basin Project area	:	6132.27 Ha
2	Command area already covered under WRCP	:	--
3	Command area already covered under other Project/ Schemes	:	1582.12Ha
4	Command Area now proposed to be covered under TNIAMP PHASE III Project	:	2830.15 Ha
5	Total No. of WUAs already formed under WRCP	:	--
6	Total No. of WUAs already formed under other Project/ Schemes	:	--
7	Total No. of WUAs proposed to be formed under TNIAMP PHASE-III	:	34

4.9. Annexure-2

Details of "Awareness Creation Activities and Walk - Through Surveys"

Sl. No	Date of Visit	Names if the Villages Visited	Awareness Programme (No.of farmers attended) (Prepare the list of farmers with acknowledgement seperately and attach)	Walk - Through Survey (No.of farmers Participated) (Prepare the list of farmers with acknowledgement seperately and attach)	WUA Formed / To be Formed
(1)	(2)	(3)	(4)	(5)	(6)
1	01.06.2020	Peruvangur	20	18	To be formed
2	01.06.2020	Thandalai	27	15	To be formed
3	02.06.2020	Thirukkanangur	22	15	To be formed
4	01.06.2020	Ka.Alambalam	15	12	To be formed
5	01.06.2020	Alathur	24	19	To be formed
6	02.06.2020	Chittalur	10	7	To be formed
7	08.07.2020	Kalayanallur	14	10	To be formed
8	08.07.2020	Kalayanallur	18	15	To be formed
9	06.07.2020	Kudiyanallur	20	12	To be formed
10	29.06.2020	Koothakkudi	14	8	To be formed
11	03.07.2020	Ninnaiyur	20	9	To be formed
12	02.06.2020	Pallagacheri	26	11	To be formed

13	18.06.2020	Prithivimangalam	15	8	To be formed
14	03.07.2020	Sithathur	26	14	To be formed
15	02.06.2020	Thyiyagai	24	13	To be formed
16	02.06.2020	Udayampattu	28	16	To be formed
17	03.07.2020	Udayanatchi	19	8	To be formed
18	18.06.2020	VadaThorasalur	30	16	To be formed
19	26.06.2020	Chellampattu	21	9	To be formed
20	26.06.2020	Kosapadi	15	11	To be formed
21	08.07.2020	Manjaputtur	22	13	To be formed
22	21.07.2020	Pandalam	30	20	To be formed
23	26.06.2020	Poikunam	15	7	To be formed
24	21.07.2020	Pootai	18	13	To be formed
25	26.06.2020	Sembarampattu	30	20	To be formed
26	21.07.2020	Urangani	20	15	To be formed
27	08.07.2020	Vadachettiyandal	18	7	To be formed
28	22.07.2020	Kallaerikuppam	20	10	To be formed
29	22.07.2020	Palayam	27	8	To be formed

30	22.07.2020	Palayakorakachanda	27	7	To be formed
31	10.07.2020	Pallipattu	22	12	To be formed
32	10.07.2020	Velanmandal	18	8	To be formed
33	16.06.2020	Kacharayapalayam	30	12	To be formed
34	16.06.2020	Vadakanandal	27	14	To be formed

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4.10. Annexure – 03

Details of Modernization works as suggested by the Farmers and as finalized by the officials of WRD

Sl. No	Date of Visit	Names of the Villages visited	Outcome of walk through survey and discussions with farmers	
			Works Suggested by Farmers	Works finalyzed by WRDOfficials
1	01.06.2020	Peruvangur	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.
2	01.06.2020	Thandalai	Sluice repair, Tank desilting, bund strengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.
3	02.026.2020	Thirukkanangur	Sluice repair, Tank desilting, bund strengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.
4	01.06.2020	Ka.Alambalam	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.
5	01.06.2020	Alathur	Bund Strengthening, Repairs to sluice, Repairs to weir, desilting supply channel, Demarcation ofBoundary	Bund Strengthening,Repairs to sluice, Repairs to weir, desilting supply channel, Demarcation ofBoundary stone.

6	02.06.2020	Chittalur	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.
7	08.07.2020	Kalayanallur	Sluice repair, Tank desilting and channel desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.
8	08.07.2020	Kalayanallur	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.
9	06.07.2020	Kudiyanallur	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.
10	29.06.2020	Koothakkudi	Bund Strengthening, Repairs to sluice, Repairs to weir, desilting supply channel, Demarcation ofBoundary	Bund Strengthening,Repairs to sluice, Repairs to weir, desilting supply channel, Demarcation ofBoundary stone.
11	03.07.2020	Ninnaiyur	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice, Weir & Supply Channel improvements
12	02.06.2020	Pallagacheri	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice, Weir & Supply Channel improvements
13	18.06.2020	Prithivimangalam	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice, Weir & Supply Channel improvements

14	03.07.2020	Sithathur	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.
15	02.06.2020	Thyiyagai	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.
16	02.06.2020	Udayampattu	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.
17	03.07.2020	Udayanatchi	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.
18	18.06.2020	VadaThorasalur	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.
19	26.06.2020	Chellampattu	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.
20	26.06.2020	Kosapadi	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice, Wei & Supply Channel improvements
21	08.07.2020	Manjaputtur	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice, Wei & Supply Channel improvements

22	21.07.2020	Pandalam	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice, Weir & Supply Channel improvements
23	26.06.2020	Poikunam	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.
24	21.07.2020	Pootai	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice, Weir & Supply Channel improvements
25	26.06.2020	Sembarampattu	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice, Weir & Supply Channel improvements
26	21.07.2020	Urangani	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice, Weir & Supply Channel improvements
27	08.07.2020	Vadachettiyandal	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice, Weir & Supply Channel improvements
28	22.07.2020	Kallaerikuppam	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channel improvements.
29	22.07.2020	Palayam	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.

30	22.07.2020	Palayakorakachanda	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.
31	10.07.2020	Pallipattu	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.
32	10.07.2020	Velanmandal	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice, Weir & Supply Channel improvements
33	16.06.2020	Kacharayapalayam	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.
34	16.06.2020	Vadakanandal	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.

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Executive Engineer, PWD/WRD.,
Vellar Basin Division,
Vridhachalam.

4.11. DETAILS OF WUAs PROPOSED IN MANIMUKTHA NADHI SUB BASIN

Sl. No	WUA No	Tanks and Villages it covers		Name of WUA	Ayacut in Ha
		Tanks	Villages		
1	2	3	4	5	6
1	M.M 1	Peruvangur Tank	Peruvangur	Peruvangur Tank Water Users Association	57.95
2	M.M 2	Thandalai Tank	Thandalai	Thandalai Tank Water Users Association	127.89
3	M.M 3	Thirukkanangur Tank	Thirukkanangur	Thirukkanangur Tank Water Users Association	120.24
4	M.M 4	Ka.Alambalam Tank	Ka.Alambalam	Ka.Alambalam Tank Water Users Association	93.78
5	M.M 5	Alathur Tank	Alathur	Alathur Tank Water Users Association	312.95
6	M.M 6	Chittalur Tank	Chittalur	Chittalur Tank Water Users Association	155.79
7	M.M 7	Kalayanallur Small Tank	Kalayanallur	Kalayanallur small Tank Water Users Association	27.97
8	M.M 8	Kalayanallur Tank	Kalayanallur	Kalayanallur Tank Water Users Association	27.97
9	M.M 9	Kudiyanallur Tank	Kudiyanallur	Kudiyanallur Tank Water Users Association	55.71
10	M.M 10	Koothakkudi Tank	Koothakkudi	Koothakkudi Tank Water Users Association	87.18
11	M.M 11	Ninnaiyur Tank	Ninnaiyur	Ninnaiyur Tank Water Users Association	49.08
12	M.M 12	Pallagacheri Tank	Pallagacheri	Pallagacheri Tank Water Users Association	131.30

13	M.M 13	Prithivimangalam	Prithivimangalam	Prithivimangalam Tank Water Users Association	152.06
14	M.M 14	Sithathur Tank	Sithathur	Sithathur Tank Water Users Association	97.10
15	M.M 15	Thyiyagai Tank	Thyiyagai	Thyiyagai Tank Water Users Association	54.05
16	M.M 16	Udayamampattu Tank	Udayampattu	Udayampattu Tank Water Users Association	46.10
17	M.M 17	Udayanatchi Tank	Udayanatchi	Udayanatchi Tank Water Users Association	59.91
18	M.M 18	VadaThorasalur Tank	VadaThorasalur	VadaThorasalur Tank Water Users Association	50.93
19	M.M 19	Chellampattu Tank	Chellampattu	Chellampattu Tank Water Users Association	65.84
20	M.M 20	Kosapadi Tank	Kosapadi	Kosapadi Tank Water Users Association	59.73
21	M.M 21	Manjaputtur Tank	Manjaputtur	Manjaputtur Tank Water Users Association	91.50
22	M.M 22	Pandalam Tank	Pandalam	Pandalam Tank Water Users Association	153.44
23	M.M 23	Poikunam Tank	Poikunam	Poikunam Tank Water Users Association	52.65
24	M.M 24	Pootai Tank	Pootai	Pootai Tank Water Users Association	112.96
25	M.M 25	Sembarampattu Tank	Sembarampattu	Sembarampattu Tank Water Users Association	44.07
26	M.M 26	Urangani Tank	Urangani	Urangani Tank Water Users Association	89.07
27	M.M 27	Vadachettiyandal	Vadachettiyandal	Vadachettiyandal Tank Water Users Association	48.18
28	M.M 28	Kallaerikuppam Tank	Kallaerikuppam	Kallaerikuppam Tank Water Users Association	13.65
29	M.M 29	PalayaSiruvangurPeriyaEri	Palayam	PalayaSiruvangurPeriyaEriWater Users Association	54.00
30	M.M 30	Palayakorakachandal	Palayakorakachandal	PalayakorakachandaTank	4.89

		Tank		Water Users Association	
31	M.M 31	Pallipattu Tank	Pallipattu	PallipattuTank Water Users Association	21.67
32	M.M 32	Velanmandal Tank	Velanmandal	VelanmandalTank Water Users Association	24.00
33	M.M 33	Kacharayapalayam Tank	Kacharayapalayam	Kacharayapalayam Tank Water Users Association	89.88
34	M.M 34	Vadakanandal Kalleri Tank	Vadakanandal	Vadakanandal KalleriTank Water Users Association	108.40
				TOTAL	2830.15

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vellar Basin Division,
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4.12. WALK THROUGH SURVEY

Sl. No	Walk Through Survey		Farmers request	Technical Solution								Proposals in Plan								Remarks
	Date	Location		WRD	Agri	Horti	AED	TNAU	AGMT	AHD	Fisheries	WRD	Agri	Horti	AED	TNAU	AGMT	AHD	Fisheries	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	01.06.2020	Peruvangur	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.	-	-	-	-	-	-	-	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.	-	-	-	-	-	-	-	
2	01.06.2020	Thandalai	Sluice repair, Tank desilting, bund strengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.	-	-	-	-	-	-	-	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.	-	-	-	-	-	-	-	
3	02.026.2020	Thirukkanangur	Sluice repair, Tank desilting, bund strengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.	-	-	-	-	-	-	-	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.	-	-	-	-	-	-	-	

4	01.06.2020	Ka.Alambalam	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								
5	01.06.2020	Alathur	Bund Strengthening, Repairs to sluice, Repairs to weir, desilting supply	Bund Strengthening,Repairs to sluice, Repairs to weir, desilting supply channel, Demarcation								Bund Strengthening,Repairs to sluice, Repairs to weir, desilting supply channel, Demarcation								
6	02.06.2020	Chittalur	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								
7	08.07.2020	Kalayanallur	Sluice repair, Tank desilting and channe desilting, bundstrengthening, removal of vegitaion	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								
8	08.07.2020	Kalayanallur	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								
9	06.07.2020	Kudiyanallur	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								

10	29.06.2020	Koothakkudi	Bund Strengthening, Repairs to sluice, Repairs to weir, desilting supply	Bund Strengthening,Repairs to sluice, Repairs to weir, desilting supply channel, Demarcation								Bund Strengthening,Repairs to sluice, Repairs to weir, desilting supply channel, Demarcation								
11	03.07.2020	Ninnaiyur	Sluice repair, Tank desilting and channe desilting , bund strengthening, removal of vegitaion	Bund Standardisation, Sluice, Weir & Supply Channel improvements								Bund Standardisation, Sluice, Weir & Supply Channel improvements								
12	02.06.2020	Pallagacheri	Sluice repair, Tank desilting and channe desilting , bund strengthening, removal of vegitaion	Bund Standardisation, Sluice, Weir & Supply Channel improvements								Bund Standardisation, Sluice, Weir & Supply Channel improvements								
13	18.06.2020	Prithivimangalam	Sluice repair, Tank desilting and channe desilting , bund strengthening, removal of vegitaion	Bund Standardisation, Sluice, Weir & Supply Channel improvements								Bund Standardisation, Sluice, Weir & Supply Channel improvements								
14	03.07.2020	Sithathur	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								
15	02.06.2020	Thyiyagai	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								

16	02.06.2020	Udayampattu	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								
17	03.07.2020	Udayanatchi	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								
18	18.06.2020	VadaThorasalur	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								
19	26.06.2020	Chellampattu	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								
20	26.06.2020	Kosapadi	Sluice repair, Tank desilting and channe desilting , bund strengthening, removal of vegitaion	Bund Standardisation, Sluice, Weir & Supply Channel improvements								Bund Standardisation, Sluice, Weir & Supply Channel improvements								
21	08.07.2020	Manjaputtur	Sluice repair, Tank desilting and channe desilting , bund strengthening, removal of vegitaion	Bund Standardisation, Sluice, Weir & Supply Channel improvements								Bund Standardisation, Sluice, Weir & Supply Channel improvements								

22	21.07.2020	Pandalam	Sluice repair, Tank desilting and channe desilting , bund strengthening, removal of vegitaion	Bund Standardisation, Sluice, Weir & Supply Channel improvements								Bund Standardisation, Sluice, Weir & Supply Channel improvements									
23	26.06.2020	Poikunam	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								Bund Standardisation, Sluice,Weir& Supply Channelimprovements.									
24	21.07.2020	Pootai	Sluice repair, Tank desilting and channe desilting , bund strengthening, removal of vegitaion	Bund Standardisation, Sluice, Weir & Supply Channel improvements								Bund Standardisation, Sluice, Weir & Supply Channel improvements									
25	26.06.2020	Sembarampattu	Sluice repair, Tank desilting and channe desilting , bund strengthening, removal of vegitaion	Bund Standardisation, Sluice, Weir & Supply Channel improvements								Bund Standardisation, Sluice, Weir & Supply Channel improvements									
26	21.07.2020	Urangani	Sluice repair, Tank desilting and channe desilting , bund strengthening, removal of vegitaion	Bund Standardisation, Sluice, Weir & Supply Channel improvements								Bund Standardisation, Sluice, Weir & Supply Channel improvements									
27	08.07.2020	Vadachettiyandal	Sluice repair, Tank desilting and channe desilting , bund strengthening, removal of vegitaion	Bund Standardisation, Sluice, Weir & Supply Channel improvements								Bund Standardisation, Sluice, Weir & Supply Channel improvements									

28	22.07.2020	Kallaerikuppam	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								Bund Standardisation, Sluice,Weir& Supply Channelimprovements.									
29	22.07.2020	Palayam	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								Bund Standardisation, Sluice,Weir& Supply Channelimprovements.									
30	22.07.2020	Palaya korakachandal	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								Bund Standardisation, Sluice,Weir& Supply Channelimprovements.									
31	10.07.2020	Pallipattu	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								Bund Standardisation, Sluice,Weir& Supply Channelimprovements.									
32	10.07.2020	Velanmandal	Sluice repair, Tank desilting and channe desilting , bund strengthening, removal of vegitaion	Bund Standardisation, Sluice, Weir & Supply Channel improvements								Bund Standardisation, Sluice, Weir & Supply Channel improvements									
33	16.06.2020	Kacharayapalayam	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								Bund Standardisation, Sluice,Weir& Supply Channelimprovements.									

34	16.06.2020	Vadakanandal	Sluice repair, Tank desilting, bundstrengthening, removal of vegitaion in the tank	Bund Standardisation, Sluice,Weir& Supply Channelimprovements.							Bund Standardisation, Sluice,Weir& Supply Channelimprovements.								

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5. IRRIGATION INFRASTRUCTURE

5.1 LIST OF TANKS (Non System Tanks)

Sl. No	Unique_id	Tanks	Village	Block	Taluk	District	Ayacut in Ha	Capacity MCM
1	TNVE-06-T0054	Peruvangur Tank	Peruvangur	Kallakurichi	Kallakurichi	Kallakurichi	57.95	0.15
2	TNVE-06-T0041	Thandalai Tank	Thandalai	Kallakurichi	Sankarapuram	Kallakurichi	127.89	0.15
3	TNVE-06-T0031	Thirukkanangur Tank	Thirukkanangur	Kallakurichi	Sankarapuram	Kallakurichi	120.24	0.21
4	TNVE-06-T0037	K.Alampalam Tank	Ka.Alambalam	Kallakurichi	Sankarapuram	Kallakurichi	93.78	0.22
5	TNVE-06-T0035	Alathur Tank	Alathur	Kallakurichi	Sankarapuram	Kallakurichi	312.95	0.49
6	TNVE-06-T0083	Chittalur Tank	Chittalur	Thiagadurugam	Kallakurichi	Kallakurichi	155.79	0.32
7	TNVE-06-T0048	Kalayanallur Small Tank	Kalayanallur	Thiagadurugam	Sankarapuram	Kallakurichi	27.97	0.29
8	TNVE-06-T0040	Kalayanallur Tank	Kalayanallur	Thiagadurugam	Sankarapuram	Kallakurichi	27.97	0.29

9	TNVE-06-T0102	Kudiyanallur Tank	Kudiyanallur	Thiagadurugam	Kallakurichi	Kallakurichi	55.71	0.33
10	TNVE-06-T0156	Kuthakkudi Tank	Koothakkudi	Thiagadurugam	Kallakurichi	Kallakurichi	87.18	0.47
11	TNVE-06-T0126	Ninnaiyur Tank	Ninnaiyur	Thiagadurugam	Kallakurichi	Kallakurichi	49.08	0.22
12	TNVE-06-T0038	Pallagacheri Tank	Pallagacheri	Thiagadurugam	Sankarapuram	Kallakurichi	131.30	1.76
13	TNVE-06-T0057	Prithivimangalam	Prithivimangalam	Thiagadurugam	Kallakurichi	Kallakurichi	152.06	0.36
14	TNVE-06-T0122	Sithathur Tank	Sithathur	Thiagadurugam	Kallakurichi	Kallakurichi	48.60	0.32
15	TNVE-06-T0079	Thyiyagai Tank	Thyiyagai	Thiagadurugam	Kallakurichi	Kallakurichi	54.05	0.18
16	TNVE-06-T0051	Udayampattu Tank	Udayampattu	Thiagadurugam	Kallakurichi	Kallakurichi	46.10	0.20
17	TNVE-06-T0124	Udayanatchi Tank	Udayanatchi	Thiagadurugam	Kallakurichi	Kallakurichi	59.91	0.29
18	TNVE-06-T0046	VadaThorasalur Tank	VadaThorasalur	Thiagadurugam	Kallakurichi	Kallakurichi	50.93	0.20
19	TNVE-06-T0020	Chellampattu Tank	Chellampattu	Sankarapuram	Sankarapuram	Kallakurichi	53.69	0.32

20	TNVE-06-T0014	Kosapadi Tank	Kosapadi	Sankarapuram	Sankarapuram	Kallakurichi	59.73	0.28
21	TNVE-06-T0022	Manjaputtur Tank	Manjaputtur	Sankarapuram	Sankarapuram	Kallakurichi	91.50	0.73
22	TNVE-06-T0001	Pandalam Tank	Pandalam	Sankarapuram	Sankarapuram	Kallakurichi	153.44	1.15
23	TNVE-06-T0018	Poikunam Tank	Poikunam	Sankarapuram	Sankarapuram	Kallakurichi	41.31	0.24
24	TNVE-06-T0003	Pootai Tank	Pootai	Sankarapuram	Sankarapuram	Kallakurichi	112.96	0.38
25	TNVE-06-T0011	Sembarampattu Tank	Sembarampattu	Sankarapuram	Sankarapuram	Kallakurichi	44.07	0.20
26	TNVE-06-T0007	Urangani Tank	Urangani	Sankarapuram	Sankarapuram	Kallakurichi	89.07	0.33
27	TNVE-06-T0019	Vadachettiyandal	Vadachettiyandal	Sankarapuram	Sankarapuram	Kallakurichi	48.18	0.18
28	TNVE-06-T0025	Kallaerikuppam Tank	Kallaerikuppa	Rishivanthiyam	Sankarapuram	Kallakurichi	13.65	0.14
29	TNVE-06-T0026	PalayaSiruvangur PeriyaEri	Palayam	Rishivanthiyam	Sankarapuram	Kallakurichi	54.00	0.31
30	TNVE-06-T0027	Palayakorakachandal Tank	Palayakorakachanda	Rishivanthiyam	Sankarapuram	Kallakurichi	4.89	0.37

31	TNVE-06-T0030	Pallipattu Tank	Pallipattu	Rishivanthiyam	Sankarapuram	Kallakurichi	21.67	0.22
32	TNVE-06-T0032	Velanmandal Tank	Velanmandal	Rishivanthiyam	Sankarapuram	Kallakurichi	24.00	0.25
33	TNVE-05-T0042	Kacharayapalayam Tank	Kacharayapalayam	Chinnaselam	Kallakurichi	Kallakurichi	89.88	0.68
34	TNVE-06-T0034	Vadakanandal Kalleri Tank	Vadakanandal	Chinnasalem	Kallakurichi	Kallakurichi	108.40	0.74
35	TNVE-06-T0036	Madhavacherry Tank	Madhavacherry	Kallakurichi	Chinnasalem	Kallakurichi	88.66	0.20
36	TNVE-06-T0029	Thavadipattu Tank	Thavadipattu	Kallakurichi	Kallakurichi	Kallakurichi	68.42	0.14
37	TNVE-06-T0004	Thiyagarajapuram Tank	Thiyagarajapuram	Sankarapuram	Sankarapuram	Kallakurichi	93.12	0.20
38	TNVE-06-T0023	Nedumanur Tank	Nedumanur	Sankarapuram	Sankarapuram	Kallakurichi	58.20	0.34
39	TNVE-06-T0028	Chitteripattu Tank	Chitteripattu	Rishivanthiyam	Sankarapuram	Kallakurichi	19.96	0.29
40	TNVE-06-T0017	Palayanur Tank	Palayanur	Sankarapuram	Sankarapuram	Kallakurichi	25.97	0.20
41	TNVE-06-T0021	Valayampattu tank	Valayampattu	Sankarapuram	Sankarapuram	Kallakurichi	31.48	0.25

42	TNVE-06-T0033	Pallagacherrychitteri	Pallagacherry	Thiyaga durugam	Sankarapuram	Kallakurichi	48.58	0.19
43	TNVE-06-T0053	Veeracholapuram Tank	Veeracholapuram	Kallakurichi	Kallakurichi	Kallakurichi	142.23	0.22
44	TNVE-06-T0049	Vaniyandal Tank	Vaniyandal	Kallakurichi	Sankarapuram	Kallakurichi	31.05	0.23
45	TNVE-06-T0045	Siruvangur Tank	Siruvangur	Kallakurichi	Kallakurichi	Kallakurichi	95.53	0.17
46	TNVE-06-T0058	Periyamampattu	Periyamampattu Tank	Kallakurichi	Kallakurichi	Kallakurichi	45.02	0.19
47	TNVE-06-T0158	Gurupeedapuram	Gurupeedapuram Tank	Kallakurichi	Kallakurichi	Kallakurichi	41.86	0.40
	Total						**3459.98**	**15.99**

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5.2 List of Anicuts

Sl. No	Anicut	Village	Block	Taluk	District	Ayacut Area in Ha	Discharge in Cumecs
1	KaradichithurAnicut	Karadichithur	Kallakurichi	Chinnasalem	Kallakurichi	No direct ayacut	8800
2	KumarapalaiyamAnicut	Kumarapalaiyam	Kallakurichi	Chinnasalem	Kallakurichi	11.34	8800
3	ThavadipattuAnicut	Thavadipattu	Kallakurichi	Chinnasalem	Kallakurichi	No direct ayacut	8800
4	PallakatcheriAnicut	Pallakatcheri	Thiagathurugam	Sankarapuram	Kallakurichi	60.77	32700
5	KootthakudiAnicut	PuthuUchimedu	Thiagathurugam	Kallakurichi	Kallakurichi	No direct ayacut	32700
6	PoottaiAnicut	Pootai	Sankarapuram	Sankarapuram	Kallakurichi	27.49	20000

7	PandalamAnicut	Pandalam	Sankarapuram	Sankarapuram	Kallakurichi	No direct ayacut	21000
8	ChellampattuAnicut	Chellampattu	Sankarapuram	Sankarapuram	Kallakurichi	No direct ayacut	10000
9	PanaiyankaalAnicut	Panaiyankaal	Sankarapuram	Kallakurichi	Kallakurichi	48.50	32700
10	SeshasamuthiramAnicut	Seshasamuthiram	Sankarapuram	Sankarapuram	Kallakurichi	12.15	10000
11	ThiyagarajapuramAnicut	Thiyagarajapuram	Sankarapuram	Sankarapuram	Kallakurichi	93.12	20000
12	SankarapuramAnicut	S.V.Palayam	Sankarapuram	Sankarapuram	Kallakurichi	26.22	21000
13	KattuvananjurAnicut	Sankarapuram	Sankarapuram	Sankarapuram	Kallakurichi	No direct ayacut	22000
14	VadachettiyandalAnicut	Kattuvananjur	Sankarapuram	Sankarapuram	Kallakurichi	139.68	24000

15	RamarajapuramAnicut	Ramarajapuram	Sankarapuram	Sankarapuram	Kallakurichi	444.48	25000
16	KilpattuAnicut	Valayampattu	Sankarapuram	Sankarapuram	Kallakurichi	43.12	26000
17	MoorarpalayamAnicut	Moorarpalayam	Sankarapuram	Sankarapuram	Kallakurichi	No direct ayacut	10000
18	ParamanathamAnicut	Moorarpalayam	Sankarapuram	Sankarapuram	Kallakurichi	45.02	10000
				Anicut Ayacut Total		**951.89**	

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5.3.a. Anicut supply channel

Sl. No	Name of Supply Channel	Length in Km	Village	Block	Taluk	District	Ayacut in Ha
1	KaradichithurAnicut	-	Karadichithur	Kallakurichi	Chinnasalem	Kallakurichi	-
2	KumarapalaiyamAnicut	1.50	Kumarapalayam	Kallakurichi	Chinnasalem	Kallakurichi	-
3	ThavadipattuAnicut	-	Thavadipattu	Kallakurichi	Chinnasalem	Kallakurichi	-
4	PallakatcheriAnicut	-	Pallakatcheri	Thiagathurugam	Sankarapuram	Kallakurichi	-
5	KootthakudiAnicut	-	PuthuUchimedu	Thiagathurugam	Kallakurichi	Kallakurichi	-
6	PoottaiAnicut	-	Pootai	Sankarapuram	Sankarapuram	Kallakurichi	-
7	PandalamAnicut	-	Pandalam	Sankarapuram	Sankarapuram	Kallakurichi	-
8	ChellampattuAnicut	-	Chellampattu	Sankarapuram	Sankarapuram	Kallakurichi	-
9	PanaiyankaalAnicut	-	Panaiyankaal	Sankarapuram	Kallakurichi	Kallakurichi	-
10	SeshasamuthiramAnicut	2.50	Seshasamuthiram	Sankarapuram	Sankarapuram	Kallakurichi	-

11	ThiyagarajapuramAnicut	-	Thiyagarajapuram	Sankarapuram	Sankarapuram	Kallakurichi	-
12	SankarapuramAnicut	-	S.V.Palayam	Sankarapuram	Sankarapuram	Kallakurichi	-
13	KattuvananjurAnicut	-	Sankarapuram	Sankarapuram	Sankarapuram	Kallakurichi	-
14	VadachettiyandalAnicut	-	Kattuvananjur	Sankarapuram	Sankarapuram	Kallakurichi	-
15	RamarajapuramAnicut	-	Ramarajapuram	Sankarapuram	Sankarapuram	Kallakurichi	-
16	KilpattuAnicut	2.00	Valayampattu	Sankarapuram	Sankarapuram	Kallakurichi	-
17	MoorarpalayamAnicut	-	Moorarpalayam	Sankarapuram	Sankarapuram	Kallakurichi	-
18	ParamanathamAnicut	-	Moorarpalayam	Sankarapuram	Sankarapuram	Kallakurichi	-
	Total	**6.00**					

5.3.b. Non System tanks supply channel

Sl. No	Name of Supply Channel	Length in Km	Village	Block	Taluk	District	Ayacut in Ha
1	Peruvangur Tank supply channel	2.10	Peruvangur	Kallakurichi	Kallakurichi	Kallakurichi	-
2	ThandalaiTank supply channel	2.50	Thandalai	Kallakurichi	Sankarapuram	Kallakurichi	-

3	ThirukkanangurTank supply channel	1.60	Thirukkanangur	Kallakurichi	Sankarapuram	Kallakurichi	-
4	K.AlampalamTank supply channel	1.05	Ka.Alambalam	Kallakurichi	Sankarapuram	Kallakurichi	-
5	AlathurTank supply channel	9.60	Alathur	Kallakurichi	Sankarapuram	Kallakurichi	-
6	ChittalurTank supply channel	6.30	Chittalur	Thiagadurugam	Kallakurichi	Kallakurichi	-
7	KalayanallursmallTank supply channel	6.00	Kalayanallur	Thiagadurugam	Sankarapuram	Kallakurichi	-
8	KalayanallurTank supply channel	1.50	Kalayanallur	Thiagadurugam	Sankarapuram	Kallakurichi	-
9	KudiyanallurTank supply channel	1.00	Kudiyanallur	Thiagadurugam	Kallakurichi	Kallakurichi	-
10	KuthakkudiTank supply channel	2.60	Koothakkudi	Thiagadurugam	Kallakurichi	Kallakurichi	-
11	PallagacheriTank supply channel	6.20	Pallagacheri	Thiagadurugam	Sankarapuram	Kallakurichi	-
12	PrithivimangalamTank supply channel	1.20	Prithivimangalam	Thiagadurugam	Kallakurichi	Kallakurichi	-
13	SithathurTank supply channel	2.00	Sithathur	Thiagadurugam	Kallakurichi	Kallakurichi	-
14	ThyiyagaiTank supply channel	1.60	Thyiyagai	Thiagadurugam	Kallakurichi	Kallakurichi	-
15	UdayampattuTank supply channel	0.75	Udayampattu	Thiagadurugam	Kallakurichi	Kallakurichi	-

16	UdayanatchiTank supply channel	1.20	Udayanatchi	Thiagadurugam	Kallakurichi	Kallakurichi	-
17	ChellampattuTank supply channel	1.80	Chellampattu	Sankarapuram	Sankarapuram	Kallakurichi	-
18	KosapadiTank supply channel	4.50	Kosapadi	Sankarapuram	Sankarapuram	Kallakurichi	-
19	ManjaputturTank supply channel	3.50	Manjaputtur	Sankarapuram	Sankarapuram	Kallakurichi	-
20	PandalamTank supply channel	2.82	Pandalam	Sankarapuram	Sankarapuram	Kallakurichi	-
21	PoikunamTank supply channel	3.00	Poikunam	Sankarapuram	Sankarapuram	Kallakurichi	-
22	PootaiTank supply channel	1.20	Pootai	Sankarapuram	Sankarapuram	Kallakurichi	-
23	SembarampattuTank supply channel	1.50	Sembarampattu	Sankarapuram	Sankarapuram	Kallakurichi	-
24	UranganiTank supply channel	3.00	Urangani	Sankarapuram	Sankarapuram	Kallakurichi	-
25	VadachettiyandalTank supply channel	1.85	Vadachettiyandal	Sankarapuram	Sankarapuram	Kallakurichi	-
26	KallaerikuppamTank supply channel	3.00	Kallaerikuppa	Rishivanthiyam	Sankarapuram	Kallakurichi	-
27	PalayaSiruvangur PeriyaEriTank supply channel	0.60	Palayam	Rishivanthiyam	Sankarapuram	Kallakurichi	-
28	PalayakorakachandalTank supply channel	0.60	Palayakorakachanda	Rishivanthiyam	Sankarapuram	Kallakurichi	-

29	PallipattuTank supply channel	2.50	Pallipattu	Rishivanthiyam	Sankarapuram	Kallakurichi	-
30	VelanmandalTank supply channel	2.50	Velanmandal	Rishivanthiyam	Sankarapuram	Kallakurichi	-
31	KacharayapalayamTank supply channel	3.20	Kacharayapalayam	Chinnaselam	Kallakurichi	Kallakurichi	-
32	Vadakanandal KalleriTank supply channel	1.00	Vadakanandal	Chinnasalem	Kallakurichi	Kallakurichi	-
33	VadaThorasalur Tanksupply channel	-	VadaThorasalur	Thiagadurugam	Kallakurichi	Kallakurichi	-
34	Ninnaiyur Tanksupply channel	-	Ninnaiyur	Thiagadurugam	Kallakurichi	Kallakurichi	-
35	MadhavacherryTank supply channel	1.80	Madhavacherry	Kallakurichi	Chinnasalem	Kallakurichi	-
36	ThavadipattuTank supply channel	1.70	Thavadipattu	Kallakurichi	Kallakurichi	Kallakurichi	-
37	ThiyagarajapuramTank supply channel	0.20	Thiyagarajapuram	Sankarapuram	Sankarapuram	Kallakurichi	-
38	NedumanurTank supply channel	1.05	Nedumanur	Sankarapuram	Sankarapuram	Kallakurichi	-
39	ChitteripattuTank supply channel	1.50	Chitteripattu	Rishivanthiyam	Sankarapuram	Kallakurichi	-
40	PalayanurTank supply channel	1.50	Palayanur	Sankarapuram	Sankarapuram	Kallakurichi	-
41	ValayampattuTank supply channel	2.50	Valayampattu	Sankarapuram	Sankarapuram	Kallakurichi	-

42	Pallagacherrychitterisupply channel	6.20	Pallagacherry	Thiyaga durugam	Sankarapuram	Kallakurichi	-
43	VeeracholapuramTank supply channel	2.00	Veeracholapuram	Kallakurichi	Kallakurichi	Kallakurichi	-
44	VaniyandalTank supply channel	0.89	Vaniyandal	Kallakurichi	Sankarapuram	Kallakurichi	-
45	SiruvangurTank supply channel	4.00	Siruvangur	Kallakurichi	Kallakurichi	Kallakurichi	-
46	PeriyamampattuTank supply channel	1.20	Periyamampattu Tank	Kallakurichi	Kallakurichi	Kallakurichi	-
47	GurupeedapuramTank supply channel	1.10	Gurupeedapuram Tank	Kallakurichi	Kallakurichi	Kallakurichi	-
	Total length	**109.41**					

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5.4List of Tanks/Anicuts executed under various schemes (Viz, Part II Scheme, NABARD, WRCP, IAMWARM, Kudimaramath and any other deposit works for the Last Five Years)

Sl. No.	Name of Anicut / Tank	Ayacut	Scheme in which executed	Amount	Details of components executed	Remarks
I	**NON SYSTEM TANK**					
1	Madhavacherry Tank	88.66	Kudimaramath Scheme 2016-17 & 2017-18	20.00	Strengthening the tank bund,Reconstruction of sluice – 1No,Repairs to weir – 2 Nos, desilting Supply channel and protection wall	
2	ThavadipattuTank	68.42	Kudimaramath Scheme 2017-18	20.00	Strengthening the tank bund,Reconstruction of sluice-1 No,Repairs to weir – 1 Nos,desilting Supply channel and protection wall	
3	Thiyagarajapuram Tank	93.12	Kudimaramath Scheme 2016-17 & 2017-18	17.00	Strengthening the tank bund,Repairs to sluice, repairs to weir and desilting Supply channel	
4	Nedumanur Tank	58.20	Kudimaramath Scheme II	22.00	Strengthening the tank bund,Reconstruction of	

					sluice,desilting Supply channel	
5	Chitteripattu Tank	19.96	Kudimaramath Scheme I & II	17.00	Strengthening the tank bund,Reconstruction of sluice,, repairs to weir and desilting Supply channel	
6	Palayanur Tank	25.97	Kudimaramath Scheme I & II	15.00	Strengthening the tank bund,Repair of sluice,repairs to weir	
7	Valayampattu tank	31.48	Kudimaramath Scheme I & II	16.00	Strengthening the tank bund,Repairs to weir , Repairs to sluice and desilting Supply channel	
8	Pallagacherrychitteri	48.58	Kudimaramath Scheme 2016-17	6.00	Strengthening the tank bund ,desilting Supply channel	
9	Veeracholapuram Tank	142.23	Kudimaramath Scheme 2017-18	20.00	Strengthening the tank bund, Repairs to sluice-3 Nos, Repairs to weir – 2 Nos and desilting Supply channel	
10	Vaniyandal Tank	31.05	Kudimaramath Scheme 2016-17 & 2017-18	16.00	Strengthening the tank bund, Reconstruction of sluice 1-No, Repairs to weir – 2 Nos and desilting Supply channel	

11	Siruvangur Tank	95.53	Kudimaramath Scheme 2017-18	21.00	Strengthening the tank bund, Repairs to sluice 3-Nos, Repairs to weir – 2 Nos and, desilting Supply channel	
12	Periyamampattu	45.02	Kudimaramath Scheme 2016-17 &2017-18	16.00	Strengthening the tank bund, Reconstruction of sluice- 1Nos, Repairs to weir – 2 Nos anddesilting Supply channel	
13	Gurupeedapuram	41.86	Kudimaramath Scheme 2016-17 & 2017-18	19.00	Strengthening the tank bund, Reconstruction of sluice- 2Nos, Repairs to weir-2 Nos and desilting Supply channel	
	Total	**790.08**		**225.00**		
II	**ANICUT**					
1	ThiyagarajapuramAnicut	93.12	Kudimaramath Scheme 2020-21	87.00	Skin wall , Repairs to Apron and culvert	
2	SankarapuramAnicut	26.22	Kudimaramath Scheme 2019-20	75.00	Skinwall, Repairs to Apron and Cut off wall	
3	KattuvananjurAnicut	0.00	Kudimaramath Scheme 2019-20	80.00	Skin wall, Repairs to Apron , cut off wall and abutment Work	
4	VadachettiyandalAnicut	139.68	Kudimaramath Scheme 2020-21	89.00	Skinwall, Repairs to Apron, Cut off wall and Desilting of supply channel	
5	RamarajapuramAnicut	444.48	Kudimaramath Scheme 2019-20	90.00	Skinwall, Repairs to Apron ,Cut off wall and Desilting of supply channel	
6	KilpattuAnicut	43.12	Kudimaramath Scheme 2019-20	80.00	Skinwall, Repairs to Apron and Cut off wall and Supply channel desilting	

7	MoorarpalayamAnicut	0.00	Kudimaramath Scheme 2019-20	70.00	Skin wall, Repairs to Apron and abutment Work	
8	ParamanathamAnicut	45.02	Kudimaramath Scheme 2019-20	85.00	Skin wall , Repairs to Apron and culvert	
	Total	**791.64**		**656.00**		

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5.5ABSTRACT ON THE DETAILS OF IRRIGATION INFRASTRUCTURE AVAILABLE AND WORKS TAKEUP UNDER TN IAMP PROJECT

SL.NO	DETAILS	ANICUT			SYSTEM TANK			NON- SYSTEM TANK			ANY OTHER SUPPLY CHANNEL		REMARKS
		NOS.	SUPPLY CHANNEL IN KM	DIRECT AYACUT IN HEC	NOS	SUPPLY CHANNEL IN KM	AYACUT IN HEC	NOS	SUPPLY CHANNEL IN KM	AYACUT IN HEC	LENGTH IN K.M	DIRECT AYACUT	
1	Available Infrastructure in sub basin	18	6.00	951.89	NIL	NIL	NIL	47	109.41	3459.98	NIL	NIL	In repect of tanks, supply channels are feeding directly to tanks.
2	Infrastructure excluded in TNIAM project since works carried out under various schemes	8	4.50	791.64	NIL	NIL	NIL	13	70.76	790.08	NIL	NIL	
3	Infrastructures that does not require any rehabilitation works	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	
4	Works to be taken up in TNIAMP Phase-III	**10**	**1.50**	**160.25**	**NIL**	**NIL**	**NIL**	**34**	**38.65**	**2669.90**	**NIL**	**NIL**	

1. Certified that the Panchayat Union Tanks are not included in this project.
2. Certified that the component of works in tanks and anicuts executed under various schemes (Viz., Part II Scheme, NABARD, WRCP, IAMWARM, Kudimaramath and any other deposit works) for the Last Five Yearswere not proposed in this project.

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6. REHABILITATION OF IRRIGATION INFRASTRUCTURES

6. REHABILITATION OF IRRIGATION INFRASTRUCTURE

6.1.Structural Status & Deficiencies in the System

The following are the present structural condition of the ManimukthaNadhi sub-basin.

1. This system is a old system existing for more than 100 Years as such requires Rehabilitation.
2. Heavy accumulation of silt formed during heavy floods.
3. Lack of adequate control of regulating structures like Anicuts, Head Sluices, Sand/ scour vents etc.,
4. The damaged (or) dilapidated condition of the existing anicuts, diversion head works etc. and supply channels causes to poor standard of the entire conveyance system.
5. The Non system tanks are to be rehabilitated.

6.2. Salient Features of Proposals:

In order to improve the conveyance and Operational Efficiency in Irrigation, it is now proposed to improve and modernize the Irrigation Infrastructures in Manimukthanadhi Sub basin.

1. Repairs to the damaged Anicuts
2. Repairs to Head Sluice to some of the supply channels to avoid breaches during floods and for better water management
3. Trimming the supply channels by earthwork excavation and providing bedbars in it.
4. Strengthening the existing flood banks in the upstream and downstream of anicuts with rough stone dry packing.
5. Repairing, Restoring the traditional water bodies (i.e. tanks)
    1. Restoring the capacity of the tanks, supply channels by desilting

2. Strengthening the bunds of the tanks and channels wherever necessary for effectively storing the water and conveying it to the entire command area and also for conveying agriculture inputs to the field.
3. Repairs to the damaged weirs
4. Repairs of Sluices
5. Providing S.G. Shutter to Sluices, Head sluices, Scour vents etc.,
6. Strengthening the bund to the standards with necessary free board recommended and rear slope protected by gravel filing and turfing.
7. Fixing flow measuring devices for effective control and conveyance of water.
8. Increasing Ground Water Potential by constructing recharge wells in tanks
9. Removing, Repairing and refixing in position of the existing S.G. shuttering arrangements and providing locking arrangements etc.,

Expected Outcome

1. Increase in conveyance efficiency from 32 % to 42 %.
2. The present Gap area of 543.23 Ha and Partially irrigated area of 1011.65 Ha have been proposed to be converted as a fully irrigated area.
3. Following irrigation infrastructure development works are proposed in this Subbasin..

    Rehabilitation works for 34 tanks

    Standardization of Tank Bund for 45785.00 m.

    Repairs to tank sluice for 44 Nos.

    Repairs to tank weir 7 Nos

    Improvements to tank supply channels for a length of 38.65 Km

    Rehabilitation of anicuts for 10 Nos

    Improvements to Anicut supply channels for 1.50 Km

6.3. TANK DETAILS WITH FREE BOARD PROVIDED

Sl. No.	Name of Tank	Maximum Height of Bund in "M"	Free board		Bund Length in (M)	Remarks
			Existing in (M)	Provided in TNIAMP in (M)		
1	Peruvangur Tank	4.20	1.00	1.50	875	Since the available free board is inadequate as per standards, the existing free board is revised to 1.50 m by raising the tank bund
2	Thandalai Tank	4.20	1.00	1.50	1875	
3	Thirukkanangur Tank	4.00	1.00	1.50	1800	
4	Ka.Alambalam Tank	3.70	1.00	1.50	2300	
5	Alathur Tank	4.70	1.50	1.50	5000	
6	Chittalur Tank	4.40	1.00	1.50	1800	
7	Kudiyanallur Tank	4.40	1.00	1.50	1400	
8	Koothakkudi Tank	4.30	1.00	1.50	2200	
9	Ninnaiyur Tank	4.15	1.00	1.50	1100	
10	Prithivimangalam	4.75	1.00	1.50	1650	
11	Sithathur Tank	4.40	1.00	1.50	1000	
12	Thyiyagai Tank	3.70	1.00	1.50	1100	
13	Udayamampattu Tank	4.00	1.00	1.50	1300	
14	Udayanatchi Tank	4.80	1.50	1.50	750	
15	Vada Thorasalur Tank	3.50	1.00	1.50	2200	
16	Pallagacherry Tank	4.80	1.50	1.50	2400	
17	Kalayanallur Small Tank	3.70	1.00	1.50	760	
18	Kalayanallur Tank	4.00	1.00	1.50	1150	
19	Chellampattu Tank	3.90	1.00	1.50	1200	

20	Kosapadi Tank	4.50	1.00	1.50	1150
21	Manjaputtur Tank	4.90	1.00	1.50	1100
22	Pandalam Tank	4.20	1.00	1.50	1400
23	Poikunam Tank	4.90	1.00	1.50	1050
24	Pootai Tank	4.60	1.00	1.50	1080
25	Sembarampattu Tank	4.20	1.00	1.50	1200
26	Urangani Tank	3.70	1.00	1.50	1100
27	Vadachettiyandal	3.40	1.00	1.50	1080
28	Kallaerikuppam Tank	3.70	1.00	1.50	855
29	Palaya SiruvangurPeriya Eri	3.70	1.00	1.50	1065
30	Palaya korakachandal Tank	3.70	1.00	1.50	1800
31	Pallipattu Tank	3.70	1.00	1.50	1120
32	Velanmandal Tank	3.70	1.00	1.50	1200
33	Kacharayapalaya m Tank	4.35	1.00	1.50	1260
34	Vadakanandal Kalleri Tank	4.40	1.00	1.50	1200

CERTIFICATE FOR STANDARDISATION OF TANK BUND

In Manimuktha Nadhi Sub basin, 34 tank is proposed in TNIAMP Project and the height of bund is not more than 5m.

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6.4 DETAILS OF PROPOSAL IN EACH INFRASTRUCTURE OF SUB BASIN – TANKS/ANICUTS/SUPPLY CHANNELS

S. No.	Name of Tank / Anicut	Bund				Sluice					Weir						Rehabilitation to Supply Channel		Rehabilitation to Anicut/ Surplus Channel		Total Amount in Lakhs	Remarks
		Rehabilitation to Bund		Model Section		Total No. of Sluice	Repairs to Sluice			Reconstruction of Sluice	Total No. of Weir	Length of Weir (m)	Repairs to Weir		Reconstruction of Weir							
		Length (m)	Amount in Lakhs	No.	Amount in Lakhs		No.	Amount in Lakhs	No.	Amount in Lakhs			No.	Amount in Lakhs	No.	Amount in Lakhs	Length (m)	Amount in Lakhs	Length (m)	Amount in Lakhs		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	pootai Anicut	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120	2.41	2.41	
2	pandalam Anicut	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	125	2.41	2.41	
3	Chellampattu Anicut	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	2.41	2.41	
4	Karadichutthur Anicut	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	68	27.97	27.97	
5	Kumarapalayam Anicut	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1500	0.99	62	27.08	28.07	
6	Thavadipattu Anicut	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	34.77	34.77	
7	Pallakatchery Anicut	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	197	84.41*	84.41	
8	Panayangal Anicut	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	197	59.31*	59.31	
9	koothakudi Anicut	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	137	51.19*	51.19	
10	Seshasamuthiram Anicut	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	2.41	2.41	
11	Peruvangur Tank	875	5.55	1	0.88	3	1	6.05	-	-	1	30	1	10.52	-	-	2100	1.17			24.17	
12	Thandalai Tank	1875	7.72	1	0.76	2	1	5.55	-	-	1	34.85	-	-	-	-	2500	1.49			15.52	
13	Thirukkanangur Tank	1800	7.76	2	1.56	2	2	12.30	-	-	1	23.4	-	-	-	-	1600	1.04			22.66	
14	Ka.Alambalam Tank	-	-	1	0.83	3	1	6.09	-	-	1	32	-	-	-	-					6.92	

15	Alathur Tank	5000	12.31	2	1.30	3	2	12.25	-	-	5	30, 35, 40, 25, 57.90	-	-	-	-	9600	3.77			29.63	
16	Chittalur Tank	1800	5.02	1	0.90	2	2	12.03	-	-	1	26	1	9.04	-	-	6300	1.87			28.86	
17	Kudiyanallur Tank	1400	5.72	1	0.80	2	1	6.22	-	-	1	25	1	9.71			1000	0.64			23.09	
18	Koothakkudi Tank	2200	5.87	1	0.76	3	1	5.99	-	-	1	25	-	-	-	-	2600	1.44			14.06	
19	Ninnaiyur Tank	1100	3.80	1	0.61	1	1	6.03	-	-	1	25	1	9.65	-	-	-	-			20.09	
20	Prithivimangalam	1650	6.90	2	1.30	3	2	10.62	-	-	1	52.40	-	-	-	-	1200	0.95			19.77	
21	Sithathur Tank	1000	5.74	2	1.29	2	2	11.70	-	-	1	36.5	-	-	-	-	2000	1.04			19.77	
22	Thyiyagai Tank	1100	5.69	1	0.65	1	1	4.36	-	-	1	75	-	-	-	-	1600	0.99			11.69	
23	Udayamampattu Tank	1300	4.80	1	0.78	1	1	5.80	-	-	1	50	-	-	-	-	750	0.67			12.05	
24	Udayanatchi Tank	750	3.32	1	0.84	2	2	11.70	-	-	1	23	1	8.67	-	-	1200	1.02			25.55	
25	Vada Thorasalur Tank	2200	6.27	1	0.82	2	2	12.34	-	-	1	20	1	7.51	-	-	-	-			26.94	
26	Pallagacherry Tank	2400	5.65	1	0.63	12	8	15.83	-	-	1	80	-	-	-	-	6200	3.14			25.25	
27	Kalayanallur Small Tank	760	4.58	2	1.86	1	-	-	-	-	1	9	-	-	-	-	-	-			6.44	
28	Kalayanallur Tank	1150	8.54	2	1.85	1	1	8.39	-	-	1	10	-	-	-	-	-	-			18.78	
29	Chellampattu Tank	1200	10.53	2	1.58	1	1	8.43	-	-	1	20	-	-	-	-	-	-			20.54	
30	Kosapadi Tank	1150	11.78	2	1.57	2	1	8.45	-	-	1	20.5	-	-	-	-	-	-			21.80	
31	Manjaputtur Tank	1100	17.41	2	1.55	3	1	8.54	-	-	2	20, 17.8	-	-	-	-	-	-			27.50	
32	Pandalam Tank	1400	16.95	2	1.54	4	1	8.46	-	-	1	40. 90	-	-	-	-	-	-			26.95	
33	Poikunam Tank	1050	14.06	2	1.59	2	1	8.45	-	-	2	20, 8	-	-	-	-	-	-			24.10	
34	Pootai Tank	1080	18.52	2	1.54	2	1	8.46	-	-	2	20, 25	-	-	-	-	-	-			28.52	
35	Sembarampattu Tank	1200	10.13	2	1.54	2	2	8.49	-	-	2	16, 14	-	-	-	-	-	-			20.16	
36	Urangani Tank	1100	16.21	2	1.55	2	1	8.44	-	-	2	28, 20	-	-	-	-	-	-			26.20	
37	Vadachettiyandal	1080	14.15	2	1.54	2	1	8.51	-	-	2	16.5,12	-	-	-	-	-	-			24.20	
38	Kallaerikuppam Tank	740	7.19	2	1.83	2	-	-	-	-	1	8	-	-	-	-	-	-			9.02	

39	Palaya SiruvangurPeriya Eri	1065	10.24	2	1.53	2	1	8.65	-	-	1	14.5	-	-	-	-	-	-			20.42	
40	Palaya korakachandal Tank	700	7.32	2	1.82	1	-	-	-	-	1	18.3	-	-	-	-	-	-			9.14	
41	Pallipattu Tank	1120	8.87	2	1.83	2	-	-	-	-	1	10	-	-	-	-	-	-			10.70	
42	Velanmandal Tank	980	7.97	2	1.45	2	-	-	-	-	1	27.5	-	-	-	-	-	-			9.42	
43	Kacharayapalayam Tank	1260	10.49	1	0.65	3	1	7.67	-	-	1	46	1	4.98	-	-	-	-			23.79	
44	Vadakanandal Kalleri Tank	1200	9.89	1	0.65	4	1	7.67	-	-	1	15	-	-	-	-	-	-	1	6.14	24.35	
	Total	45785	296.95	56	42.18	82	44	253.47	0	0	44	812.7	7	60.08	0	0	40150	20.22	10 32	300.51	973.41	

*Anicut repair including skin wall , Apron, wearing coat, Cutoff wall

17.09.2020

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6.5 DETAILS OF PROPOSAL IN EACH INFRASTRUCTURE OF SUB BASIN – TANKS AND ANICUT ABSTRACT (PACKAGE WISE)

S. No.	For Rehabilitation Package No	Ayacut in Ha	No of Tanks/ Anicut	Bund				Sluice					Weir						Rehabilitation to Supply Channel		Rehabilitation to Anicut/ Surplus Channel		Total Amount in Lakhs
				Rehabilitation to Bund		Model Section		Total No. of Sluice	Repairs to Sluice		Reconstruction of Sluice		Total No. of Weir	Length of Weir (m)	Repairs to Weir		Reconstruction of Weir						
				Length (m)	Amount in Lakhs	No	Amount in Lakhs		No.	Amount in Lakhs	No.	Amount in Lakhs			No.	Amount in Lakhs	No.	Amount in Lakhs	Length (m)	Amount in Lakhs	NOS	Amount in Lakhs	
1	Package No I	2830.15	34/	45785	296.95	56	42.18	82	44	253.47	-	-	44	-	7	60.08	-	-	40050	80.22	10	300.51	973.41
2	Provision for GST(12%)																						116.81
3	Provision for Petty Supervision Charges, Charges for Contingencies and Unforeseen items, advertisement charges, Photographic Charges, documentation Charges (2.5%)																						27.11
4	Provision for Labour Welfare Fund (1%)																						11.17
5	Provision for OFD works including field channel lining & measuring devices																						60.00
6	Provision for Environmental component																						7.00
7	Provision for Ground water component																						148.50
	TOTAL																						1344.00

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12/9/2020

Executive Engineer, PWD/WRD.,
Vellar Basin Division,
Vridhachalam.

6.6.WRD COST TABLE

Ayacut:2830.15 Ha.

Sl. No.	DESCRIPTION OF WORK	Unit	Total	
			Qty	Amt in lakhs
1	Tank Bund standardization (including Model Section)	M	45785	339.13
2	Repairs of Sluice	Nos	44	253.47
3	Repairs to Weir	Nos	7	60.08
4	Improvements to Tank Supply Channel	Km	38.65	19.23
5	Repairs to Anicut	Nos	10	300.51
6	Improvements to Anicut Supply Channel	Km	1.5	0.99
	TOTAL (Tank & Anicut)			**973.41**
7	Provision for GST@ 12%			116.81
	SUB TOTAL (A)			**1090.22**
8	Provision for Petty Supervision Charges, Charges for Contingencies and Unforeseen items, advertisement charges, Photographic Charges, documentation Charges @2.5%			27.11
9	Provision for Labour Welfare Fund @ 1%			11.17
10	Provision for OFD Works including field channel lining & measuring device @ Rs. 2120.02/Ha.			60.00
11	Provision for Environmental component			7.00
12	Provision for Ground water component			148.50
	SUB TOTAL (B)			**253.78**
	Grand Total (A+B)		-	**1344.00**

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Superintending Engineer, PWD/WRD.,
Vellar Basin Circle,
Cuddalore.

18/9/2020
Chief Engineer, PWD/WRD.,
Chennai Region,
Chepauk, Chennai.

18-9-20

6.7. PACKAGE ABSTRACT

Ayacut - 2830.15 Ha

Sl. No.	Description	Amt in Lakhs	Remarks
I	**CIVIL WORKS**		
1	Package No.1	**973.41**	
2	**Provision for GST 12%**	**116.81**	
	TOTAL (A)	**1090.22**	
II	**L.S.Provisions**		
1	Provision for Petty Supervision Charges, Charges for Contingencies and Unforeseen items, advertisement charges, Photographic Charges, documentation Charges @2.5%	27.11	
2	Provision for Labour Welfare Fund @ 1%	11.17	
III	**OFD WORKS**		
1	Field Channel and Measuring device	60.00	
	Total	**1188.50**	

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TNIAMP PHASE III

MANIMUKTHA NADHI SUB BASIN

GENERAL ABSTRACT

PACKAGE	CONTENT	AMOUNT (In Lakhs)
Package No. I	Rehabilitation and Modernisation of 10 Nos of Anicuts and 34 Nos of Tank in Manimuktha Nadhi Sub Basin under TNIAMP Phase-III in Kallakurichi District.	**1188.50**
	Environmental Component	7.00
	Ground Water Component	148.50
	TOTAL	**1344.00**

17.09.2020

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17/9/20

Superintending Engineer, PWD/WRD.,
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Cuddalore.

6.8.1.BILL OF QUANTITES

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
1	Clearing light jungle and disposing of the same as directed by the Engineer in charge of the works and as per technical specification.	**650215.00** (Six LakhsFifty Thousand Two Hundred and Fifteenonly)	1 M^2 (One Square Metre)	**4.10** (Rupees Four and PaiseTenonly)	**2665881.50**
2	Turfing on downstream side(rear) slope of bund including watering and fixing with initial lead of up to 50 m including cost of turf and labour charges etc complete as directed by the Engineer in charge of works and as per the technical specifications	**141170.00** (One Lakh Forty One Thousand One Hundred and Seventy only)	1 M^3 (One Cubic Metre)	**29.30** (Rupees twenty nine paiseThirty only)	**4136281.00**
3	Earthwork in all soils except hard rock requiring blasting and conveying with a lead of 0 to 100M by deploying earth moving machineries and tippers for formation of bund in layers of suitable thickness, depending upon type of compaction equipment deployed and not exceeding 23cm thickness, benching of slopes prior to placement of earth fill, breaking clods, formation of bund, breaking clods, sectioning extra watering to OMC and compaction of each layers to 95% of proctor density through deployment of appropriate compaction equipment (8-10 ton vibratory power roller/short width (+0.90M width drum) power roller or vibratory power roller/fuel-operated or electrical operated vibratory plate compactors ensuring compaction of designed bund section including side slopes compactioncomplete as per specifications etc., complete as directed by the Engineer-in-charge	**133520** (One Lakh Thirty Three Thousand Five Hundred and Twenty only)	1 M^3 (One Cubic Metre)	**78.77** (Rupees seventy eight paise seventy seven only)	**10517370.40**
4	Earthwork Compaction side slopes of Tank Bund by using Rig mounted steel Plate Compactors to achieve designed bund slope etc complete as directed by the Engineer in charge of works and as per the Technical Specifications.	**121049.99** (One Lakh Twenty One Thousand and Forty Nine point Nine Nineonly)	1 M^3 (One Cubic Metre)	**5.40** (Rupees five paiseForty only)	**653669.95**
5	Supplying and fixing TBL stones of size 15 x 15 cm including cost of hard granite stone roughly dressed and neatly dressed top side faces to 15 cm depth with letters cutting on top face up to 7.50 cm height and fixing the same with labour charges for earth work using M10 concrete using granite metal of 20mm size mixing in mechanically in approved	**214.00** (Two Hundred and Fourteen only)	1 M^3 (One Cubic Metre)	**351.55** (Rupees three hundred and fifty one paise fifty five only)	**75231.70**

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
	mixer including fixing in position on top of the bund curing, painting, finishing on top of the bund etc., complete as directed by the engineer in charge of works and as per technical specification.				
6	Earth work in all soils except hard rock requiring blasting and conveying for foreshore bund with lead of 0 to 100 meters deploying earth moving machineries and tippers including benching, formation of bund, breaking clods sectioning including water consolidating by hand roller etc., complete.	**43695.00** (Forty Three Thousand Six Hundred and Ninety Five only)	1 M^3 (One Cubic Metre)	**47.42** (Rupees forty seven paise forty two only)	**2072016.90**
7	Supplying and spreading with gravel in layers of not more than 15cm thick well rammed and consolidated including stacking etc., complete complying with standard specification	**10451.75** (Ten Thousand Four Hundred and Fifty One point Seven Five only)	1 M^3 (One Cubic Metre)	**748.38** (Rupees Seven Hundred and forty eight paise thirty eight only)	**7821880.67**
8	Providing and fixing in position RCC Boundary pillor of size 0.2 x 0.2 x 1.5m M20 design mix using machine crushed 20mm gauge hard granite storn jelly including grills placed in position and laying consolidating by vibratores curing finishing etc., complete.	**1235.00** (One Thousand Two Hundred and Thirty Five only)	1 M^3 (One Cubic Metre)	**1947.77** (Rupees One Thousand Nine Hundred and forty SevenpaiseSeventy Seven only)	**2405495.95**
9	Earthwork excavation for cut opening tank bund excavation with initial lead of 10m and lift of 2m in hard stiff clay , stiff black cotton soil, hard red earth, shale's, murams, stony earth and earth mixed with small size boulders and hard gravelly soil etc, complete as directed by the Engineer in charge of works and as per the technical specifications.	**12367.05** (Twelve Thousand Three Hundred and Sixty Seven point Zero five only)	1 M^3 (One Cubic Metre)	**87.02** (Rupee Eighty Seven Paise Two only)	**1076180.69**
10	Extra for additional 10 m lead for tank bund cut open	**4993.45** (Four Thousand Nine Hundred and Ninety Three point Four Five only)	1 M^3 (One Cubic Metre)	**8.10** (Rupees Eight PaiseTen only)	**40446.95**
11	Dismantling, clearing away and carefully stacking material and without disturbing nearby structure useful for reuse for any thickness of brick or stone masonry in Cement Mortar walls under 3 (Three) meters high etc, complete as directed by the Engineer in charge of works and as per the technical specifications	**916.70** (Nine Hundred and Sixteen point seven Zero only)	1 M^3 (One Cubic Metre)	**193.00** (Rupees One Hundred and Ninety Three Only	**176923.10**
12	Dismantling, clearing away and carefully stacking material and without damaging the near by structures if any ,clearing	**247.01** (Two hundred and forty seven point Zero one only)	1 M^3 (One Cubic	**332.00** (Rupees Three	**82007.32**

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
	away plain cement concrete as directed by the Engineer in charge of the works as per technical Specification cement concrete		Metre)	Hundred and Thirty Two only)	
13	Dismantling, clearing away and carefully stacking material and without damaging the near by structures if any ,clearing away Reinforcement cement concrete as directed by the Engineer in charge of the works as per technical Specification cement concrete	**28.05** (Twenty Eight point Zero five only)	1 M^3 (One Cubic Metre)	**350.00** (Rupees Three Hundred and Fifty only)	**9817.50**
14	Earthwork excavation for foundation in all soils except hard rock requiring blasting including shoring strutting and baling out water wherever necessary etc. complete complying with standard specification .	**2084.31** (Two Thousand Eighty four point Three One only)	1 Qtl (One Quintal)	**79.81** (Rupee Seventy Nine Paise Eighty One only)	**166348.78**
15	Supplying and filling with M.sand in layers of not more than 15 cm thick including watering, consolidation etc., complete complying with standard specification and as directed by the departmental officers.	**108.32** (One Hundred and Eight point three two only)	1 M^3 (One Cubic Metre)	**1885.08** (Rupee One Thousand Eight Hundred and Eighty Five PaiseEight only)	**204191.87**
16	Providing and placing in Position of Plain cement concrete of grade M10 using hard broken stone aggregate of maximum nominal size of 40mm to IS specified grading mixing by mixer machine including dewatering the placement site, laying the concrete in layers and in bays ,compacting and finishing the surface with all leads and lifts watering curing to attain the profile and strength as specified for various depth and height and above ground level etc complete as directed by the Engineer in charge of work complying with the standard specification	**1723.56** (One thousand seven hundred and twenty Three point Five six only)	1 M^3 (One Cubic Metre)	**4756.87** (Rupee Four Thousand Seven Hundred and Fifty Six paise Eighty Five only)	**8198750.86**
17	Providing and placing in position of Plain cement concrete of grade M 15 with well graded aggregates and the nominal maximum size of coarse aggregate of 20mm and downgraded weigh batching the ingredients and mixing in approved mixers/batching plant (to produce concrete of the specified characteristic strength of 15N/mm2 at 28 days) including dewatering the placement site by bailing/pumping and by diverting wherever necessary laying the concrete in layers of not exceeding 15cm thick and in bays vibrating, compacting and	**330.78** (Three Hundred and Thirty point seven eight only)	1 M^3 (One Cubic Metre)	**6682.81** (Rupee Six Thousand Six Hundred and Eighty TwoPaise Eighty One only)	**2210539.89**

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
	finishing the surface with all leads and lifts, watering curing complete so as to attain the profile and strength specified in the approved drawing & specifications and including the cost component of providing rigid and smooth centering for soffits of concrete slab for plain surface including shuttering wherever necessary for various depths below ground level and various heights above ground level using MS sheets of size 90 x 60cm and BG 10 gauge stiffened with MS Angles of size 25 x 25 x 3mm laid over silver oak joist of size 7.50 x 5cm, spaced at op cm C/c and supported by casurina props of size 10 to 13cm diameter, spaced at 75cm C/c etc., complete as directed by the Engineer in charge of works and as per the technical specifications.				
18	Providing and placing in position of Plain cement concrete of grade M 15 with well graded aggregates and the nominal maximum size of coarse aggregate of 40mm and 20mm in the ratio of 60:40 weigh batching the ingredients and mixing in approved mixers/batching plant (to produce concrete of the specified characteristic strength of 15N/mm2 at 28 days) including dewatering the placement site by bailing/pumping and by diverting wherever necessary laying the concrete in layers of not exceeding 15cm thick and in bays vibrating, compacting and finishing the surface with all leads and lifts, watering curing complete so as to attain the profile and strength specified in the approved drawing & specifications and excluding the cost component of providing rigid and smooth centering for soffits of concrete slab for plain surface including shuttering wherever necessary for various depths below ground level and various heights above ground level using MS sheets of size 90 x 60cm and BG 10 gauge stiffened with MS Angles of size 25 x 25 x 3mm laid over silver oak joist of size 7.50 x 5cm, spaced at op cm C/c and supported by casurina props of size 10 to 13cm dia, spaced at 75cm C/c etc., complete as directed by				

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
	the Engineer in charge of works and as per the technical specifications.				
a)	Below G.L up to 1.50m depth	**1894.39** (One Thousand Eight Hundred and Ninety Four Point Three Nine only)	1 RM (One Running Metre)	**7868.04** (Rupee Seven Thousand Eight Hundred and Sixty Eight paise Four only)	**14905136.30**
b)	Above G.L up to 4.50 m Height	**263.50** (Two Hundred and Sixty Three Point Five only)	1 RM (One Running Metre)	**6051.77** (RupeeSix Thousand and Fifty One paise Seventy Seven only)	**1594641.40**
19	Providing and placing in position of Ready mixed cement concrete of grade M 20 with well graded aggregates and the nominal maximum size of coarse aggregate of 20mm weigh batching the ingredients and mixing in approved mixers/batching plant (to produce concrete of the specified characteristic strength of 20 N/mm2 at 28 days) including dewatering the placement site by bailing/pumping and by diverting wherever necessary laying the concrete in layers of not exceeding 15cm thick and in bays vibrating, compacting and finishing the surface with all leads and lifts, watering curing complete so as to attain the profile and strength specified in the approved drawing & specifications and including the cost component of providing rigid and smooth centering for soffits of reinforced cement concrete slab for plain surface including shuttering wherever necessary for various depths below ground level and various heights above ground level using MS sheets of size 90 x 60cm and BG 10 gauge stiffened with MS Angles of size 25 x 25 x2mm laid over silver oak joist of size 10 x 6.5cm, spaced at 90cm C/C and supported by casurina props of size 10 to 13cm dia, spaced at 75cm C/C etc., complete as directed by the Engineer in charge of works and as per the technical specifications 0 to 270m/300m.	**1971.28** (One Thousand Nine Hundred and Seventy One Point Two Eight only)	1 M^3 (One Cubic Metre)	**8245.02** (Rupee Eight Thousand Two Hundred and Forty Five PaiseTwo only)	**16253243.03**
20	Supplying, fabricating and placing in		1 Nos	**6886.61**	**3612302.41**

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
	position of HSD (high Yield Strength) bars for all reinforced cement concrete works including cost of binding wire, steel rods, conveyance charges and labour charges etc., complete, complying with standard specifications and as directed by the Engineer in - charge of work.. (Specification No.9.1 to 9.12.1)	**524.54** (Five hundred and Twenty Four Point Five Four only)	(One Number)	(Rupee Six Thousand Eight Hundred and Eighty Six Paise Sixty Six only)	
21	Refilling the excavatedearth in layers not exceeding 23cm thickness and watering to OMC (Optimum Moisture content) and compaction of each layer to 95% of proctor Density through deployment of appropriate compaction equipment (8-10T power roller) vibratory power roller of short width (0.90m width drum) power roller or vibratory power roller/fuel operated or electrically operated, vibratory plate compactors, ensuring compaction of designed bund section including side slopes etc., complete as directed by the Engineer in charge of works and as per the technical specifications.	**8076.53** (Eight Thousand and Seventy Six Point five three only)	1 M (One Square Metre)	**54.02** (Rupee Fifty Four Paise Two only)	**436294.15**
22	Random Rubble masonry in Cement mortar 1:4 (One cement and four sand by volume mixed mechanically in approved mixer) using new hard granite stones and bond stones from approved sources including simultaneous pointing of the exposed surface with same mortar and all incidental charges such as bailing out water, watering, curing, finishing etc, complete as directed by the Engineer in charge of works and as per the technical specifications	**816.63** (Eight Hundred and Sixteen point six Three only)	M^2 (One Square Metre)	**4620.44** (Rupee Four Thousand Six Hundred and Twenty paise Forty four only)	**3773189.92**
23	Rough stone dry packing for revetment and apron using new hard granite stones obtained from approved sources including the cost of new wedges for filling the gaps etc, complete as directed by the Engineer in charge of works and as per the technical specifications	**1261.01** (One Thousand Two Hundred and Sixty One point One only)	RM (Running Metre)	**1773.23** (Rupee One Thousand Seven Hundred and Seventy Three Paise Twenty Three only)	**2236060.76**
24	Fabricating, supplying and erection of Screw Gearing Steel Shutters of size up to 1.00 m width made out of 8mm thick Mild Steel Plates and 65x65x6mm Mild Steel Angle for outer frame with equal spacing made out of same section and 8 mm Mild Steel plate for Gusset plate 2 Nos of size 0.30 x 0.23 M with required	**21.45** (Twenty One point four five only)	RM (Running Metre)	**32690.00** (Rupee Thirty Two Thousand Six Hundred and Ninety only)	**701200.50**

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
	bolts and nuts etc, and erection of shutter in position at site with all accessories and conveying and leading the shutter to the site. The rate to include dismantling the old shutter from the vent, including the power required, conveyance of equipments to site, loading of dismantled materials after completion of work, transporting to stores, unloading and stacking. The shutter shall be finished with one coat of Anticorrosive black paint over one coat of Red Oxide paint. The rate shall include petty civil work and trial operation and all taxes etc, complete.				
25	Fabricating, supplying and erection of Screw Gearing Steel Shutters of Size above 1.00m and up to 2.00m width consist of Skin plate made out of 8mm thick Mild Steel plate and horizontally stiffened with 100x50mm mild steel channel at an interval not more than 0.50m and vertical stiffeners made out of same section at an interval not more than 0.60m and provided with 8mm thick Mild Steel gusset plate of required size on both sides fastened with rust free bolts and nuts etc. Conveying the fabricated shutter by using lorries including loading, unloading and leading the shutter to the vent. Dismantling the eroded shutter and shuttering arrangements by using necessary gas cutting equipments. Erecting the new shutter and the shuttering arrangements in the vent in proper position by using necessary hoisting equipments. The shutter shall be painted with two coats of Anticorrosive black paint over one coat of Red oxide primer. The rate including cost of materials, consumables, labours, power charges, conveyance charges, charges for all equipments required conveying the dismantled materials to the section stores, cost of petty civil works, trial operation of shutter and including all taxes etc., complete.	**19.50** (Nineteen point Five Zero only)	RM (Running Metre)	**37710.00** (Rupee Thirty Seven Thousand Seven Hundred and Ten only)	**735345.00**
26	Fabricating supplying and fixing of shutter Groove Angle made out of 65 X 65 X 6mm Mild Steel Angle with required height including welding of	**259.54** (Two Hundred and Fifty Nine Point Five Four only)	1 Nos (One Number)	**2410.00** (Rupee Two Thousand Four Hundred and Ten only)	**625491.40**

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
	Holdfast of size 25x25x6mm Mild Steel Angle 2 Nos on each side and including petty civil works and painting with one coat of Anticorrosive black paint over one coat of Red Oxide primer etc, including dismantling the old Groove Angle conveying, loading and unloading and stacking to section store etc, complete.				
27	Fabricating, supplying and fixing of Screw Rod 50 mm, dia Mild Steel Round Rod duly machined and fully threaded to Suit the capstan head assembly with required bolt and nut, fastened with eye plate of the shutters including greasing, etc including dismantling old Screw Rod conveying, loading and unloading and stacking to section store etc., complete.	**136.75** (One Hundred and Thirty Six point Seven Five only)	1 M^3 (One Cubic Metre)	**5509.00** (Rupee Five Thousand Five Hundred and Nine only)	**753355.75**
28	Fabricating, supplying and fixing of Screw Rod 63 mm, dia Mild Steel Round Rod duly machined and fully threaded to Suit the capstan head assembly with required bolt and nut, fastened with eye plate of the shutters including greasing, etc including dismantling old Screw Rod conveying, loading and unloading and stacking to section store etc., complete.	**30.00** (Therteen only)	1 M^3 (One Cubic Metre)	**7841.00** (Rupee Seven Thousand Eight Hundred and Forty One only)	**235230.00**
29	Fabricating, Supplying and fixing of Top Beam made up of 150x75 mm (ISMB150) duly drilled to suit the Head set Assembly with required bed bolt made out of 25 mm Mild Steel Round rod duly threaded with suitable anchorage arrangements to a height of 0.90 m with necessary Fish plate made out of 8 mm Mild Steel Plate of size 0.23 x 0.30m 2 Nos with required holes. Conveying and leading the top beam arrangements to the worksite. Fixing the top beam arrangements at the top of the vent to correct position including dismantling the existing eroded top beam, conveying and stacking at the section store. The top beam should be painted with two coats of AC black paint over one coat of red oxide primer. The rate including cost of materials, labours, charges for all fabricating and hoisting	**175.50** (One Hundred and seventy Five point five Zero only)	M^2 (One Square Metre)	**4527.00** (Rupee Four Thousand Five Hundred and Twenty Seven only)	**794488.50**

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
30	Fabricating, Supplying and fixing of Top Beam made up of 200x100 mm (ISMB 200) duly drilled to suit the Head set Assembly with required bed bolt made out of 25 mm Mild Steel Round rod duly threaded with suitable anchorage arrangements to a height of 0.90 m with necessary Fish plate made out of 8 mm Mild Steel Plate of size 0.23 x 0.30m 2 Nos with required holes. Conveying and leading the top beam arrangements to the worksite. Fixing the top beam arrangements at the top of the vent to correct position including dismantling the existing eroded top beam, conveying and stacking at the section store. The top beam should be painted with two coats of AC black paint over one coat of red oxide primer. The rate including cost of materials, labours, charges for all fabricating and hoisting	**58.80** (Fifty Eight point Eight Zero only)	M^2 (One Square Metre)	**6773.33** (Rupee Six Thousand Seven Hundred and Seventy Three Paise Thirty Three only)	**398271.80**
31	Fabricating, Supplying and fixing of Head Set Assembly Light duty with hexagonal nut (approximate 50 Kg) made up of cast iron including moulding, machining and the hexagonal nut threaded to suit the Screw Rod provided with thrust bearings for smooth operation. Conveying and leading the head set assembly to the work site. Fixing the head set assembly to the top beam by using required bolts and nuts in proper alignment including dismantling the existing damaged Head set assembly, conveying and stacking at section store. The Head set assembly supplied with operating key and the both should be painted with two coats of AC black paint over one coat of red oxide primer. The rate including cost of materials, labours, charges for wooden pattern, moulding and charges for all machining equipments, conveyance charges for labours and materials and including all other taxes etc., complete.	**43.00** (Forty Three only)	M^2 (One Square Metre)	**19768.00** (Rupee Nineteen Thousand Seven Hundred and Sixty Eight only)	**850024.00**
32	Fabricating, Supplying and fixing of Head Set Assembly Light duty with hexagonal nut (approximate 70 Kg) made up of cast iron including moulding, machining and the hexagonal nut threaded to suit the Screw Rod provided with thrust bearings for smooth operation. Conveying and leading the	**10.00** (Ten only)	M^2 (One Square Metre)	**25853.00** (Rupee Twenty Five Thousand Eight Hundred and Fifty Three only)	**258530.00**

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
	head set assembly to the work site. Fixing the head set assembly to the top beam by using required bolts and nuts in proper alignment including dismantling the existing damaged Head set assembly, conveying and stacking at section store. The Head set assembly supplied with operating key and the both should be painted with two coats of AC black paint over one coat of red oxide primer. The rate including cost of materials, labours, charges for wooden pattern, moulding and charges for all machining equipments, conveyance charges for labours and materials and including all other taxes etc., complete.				
33	Providing and placing in position of plain cement concrete of grade M 10 with well graded aggregates and the nominal maximum size of coarse aggregate of 20mm and downgrade to I.S specified grading and mixing in mechanically in approved mixer (to produce concrete of the specified characteristic strength of 10N/mm2 at 28 days) including dewatering the placement site bailing/pumping and by diverting wherever necessary laying the concrete in layers of not exceeding 15cm thick compacting finishing the surface with all leads and lifts watering, curing complete so as to attain the profile and strength specified in the drawing etc., complete as directed by the Engineer in charge of works and as per the technical specifications.	**101.50** (One Hundred and One point Five Zero only)	1 M^3 (One Cubic Metre)	**5154.92** (Rupee Five Thousand One Hundred and Fifty Four Paise Ninety Two only)	**523224.38**
34	Providing and placing in position of plain cement concrete of grade M 20 with well graded aggregates and the nominal maximum size of coarse aggregate of 20mm weigh batching the ingredients and mixing in approved mixers/batching plant (to produce concrete of the specified characteristic strength of 20N/mm2 at 28 days) including dewatering the placement site by bailing/pumping and by diverting wherever necessary laying the concrete in layers of not exceeding 15cm thick and in bays vibrating, compacting and finishing the surface with all leads and lifts, watering curing complete so as to attain the profile and strength specified	**374.90** (Three Hundred and Seventy Four Point Nine only)	1 M^3 (One Cubic Metre)	**6614.94** (Rupee Six Thousand Six Hundred and Fourteen paise Ninety Eight only)	**2479941.01**

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
	in the approved drawing & specifications and excluding the cost component of providing rigid and smooth centering for soffits of reinforced cement concrete slab for plain surface including shuttering wherever necessary for various depths below ground level and various heights above ground level using MS sheets of size 90 x 60cm and BG 10 gauge stiffened with MS Angles of size 25 x 25 x2mm laid over silver oak joist of size 10 x 6.5cm, spaced at 90cm C/C and supported by casurina props of size 10 to 13cm diameter, spaced at 75cm C/C etc., complete as directed by the Engineer in charge of works and as per the technical specifications 0 to 270m/300m.				
35	Earth work deploying earth moving machineries for desilting channel and forming bund on either side and depositing the earth on bank including jungle clearing the earth on banke including jungle clearance etc., complete. Having bed width upto 3.oo m.	**51900.00** (Fifty One Thousand and Nine Hundred only)	1 M^3 (One Cubic Metre)	**26.85** (Rupee twenty six paise eighty five only)	**1393515.00**
36	Earth work deploying earth moving machineries for desilting channel and forming bund on either side and depositing the earth on bank including jungle clearing the earth on banke including jungle clearance etc., complete. Having bed width 3.oo m. to 10.00 M	**3000.00** (Three Thousand only)	1 M^3 (One Cubic Metre)	**32.95** (Rupee Thirty Two Paise Ninety Five only)	**98850.00**
37	Earthwork excavation in all classes of soils except hard rock requiring blasting and depositing on bank SS20B with all leads and lifts and all other incidental charges such as shoring, strutting wherever necessary atc. Complete for dressing the bed upto sill level etc. complete (Open excavation)	**297.00** (Two Hundred and Ninety Seven only)	1 M^3 (One Cubic Metre)	**70.05** (Rupee Seventy paise five only)	**20804.85**
38	Earthwork excavation in all classes of soils except hard rock requiring blasting and depositing on bank SS20B with all leads and lifts and all other incidental charges such as shoring, strutting wherever necessary atc. Complete for dressing the bed upto sill level etc.	**512.00** (Five Hundred and Twelve only)	1 hr (One Hour)	**149.85** (Rupee One Hundred and Forty Nine paise Eighty Five only)	**76723.20**

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
	complete (Narrow excavation)				
39	Earth work in all soils except hard rock requiring blasting and conveying for River Shoal Removal with lead up to 1km. deploying earth moving machineries and tippers including watering and consolidation by using power roller and benching, formation of bunds, breaking clods, sectioning etc., complete.	**2200.00** (Two Thousand and Two Hundred only)	1 M^3 (One Cubic Metre)	**55.95** (Rupee Fifty Five paise Ninety Five only)	**123090.00**
40	Regrading the river bed including jungle clearance deploying the heavy machinary like dozer on use hour basis including cost of hire charges fuel crew labour etc.. Complete complying with standard specifications and as dircted by the departmental officers.	**1395.00** (One Thousand Three Hundred and Ninety Five only)	1 hr (One Hour)	**1200.00** (Rupee One Thousand and Two Hundred only)	**1674000.00**
41	Dewatering of using diesel pump set having capacity 3 HP to 7 HP including cost of hire charges diesel labour etc..Complete complying with standard specifications and as directed by the departmental officers.	**385.00** (Three hundred and eighty five only)	1 hr (One Hour)	**333.89** (Rupee Three Hundred and Thirty three paise eighty nine only)	**128547.65**
42	Drilling holes in hard granite 32 mm diametre etc., complete complying with standard specification and as directed by the departmental officers.	**910.00** (Nine Hundred and Ten only)	1 M^3 (One Cubic Metre)	**161.00** (Rupee One Hundred and Sixty one only)	**146510.00**
	Total				**97341046.04**

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6.8.2 Calculation of Machineries Requirement

MANIMUKTHA NADHI SUB BASIN

Hydraulic excavator

Tippers	10	Nos	
working hour=	7	Hours / Day	
	2	loads/ hour	
1 trip of quantity=	4	m^3/ trip	
For 1 day=	560	m^3 /Day	
For 1 month=	25	Working days	
	14000	m^3	

Total quantity of earth work = 246566.36 / 14000.00 = 18 Months

Working period for earth work= 18 Months including rainy season.

Machineries required for earth work:

1	Hydraulic excavator	=	04	Nos
2	Tippers / Lorries	=	10	Nos
3	Power roller	=	03	Nos
4	Vibrated compactor	=	03	Nos
5	Water lorries	=	04	Nos

Mixer machine

working hour=	6	Hours / Day	
	3	m^3/ hour	
For 1 day=	18	m^3 /Day	
For 1 month=	25	Working days	
	450	m^3/ month	

Total quantity of concrete 6659.91 m^3 6659.91 / 450 = 15

Months required to complete Concrete works= **8** months

Mixer machine required= 2 Nos

Material conveyance Tippers / Lorries

Cement =	10	mt / Trip	1 trip / day	10	mt / day
Sand =	5.66	m^3 / Trip	4 trips / day	22.64	m^3 /day
Metal / stone =	5.66	m^3 / Trip	5 trips / day	28.30	m^3 /day

PACKAGE NO.1

P.C.C M 10 using 40mm	1723.56 m^3	356.78 MT
P.C.C M 10 using 20mm	101.50 m^3	22.43 MT
P.C.C M 15 using 20mm	330.78 m^3	93.61 MT
P.C.C M 15 using 40mm &20mm	2157.89 m^3	579.61 MT
P.C.C M 20 using 20mm	374.90 m^3	137.21 MT
R.C.C M 20 using 20mm	1971.28 m^3	721.49 MT
	6659.91 m^3	**1911.13** MT

Total quantity of cement	**1911.13**	MT		
Lorry required for conveyance	191.11	Nos	191	Nos
Total quantity of sand	3772.13	m^3	3772.13 / 22.64	
Lorry required for conveyance	166.61	m^3	167	Nos

Total quantity of metal	7544.26	m^3	7544.26 / 28.30		
Lorry required for conveyance	266.58	m^3		267	Nos
Lorry required for conveyance				625	Nos

Tipper / Lorries for conveyance of materials

$$= \frac{625}{20}$$

31.5 Lorries/month

6 Nos for **20** days for **6** months

6.8.3. REQUIREMENT OF EQUIPMENTS AND MATERIALS - ABSTRACT

PACKAGE NUMBER	EQUIPMENTS REQUIRED IN NUMBERS							MATERIAL REQUIRED				
	HYDRAULIC EXCAVATOR	TIPPER / LORRY	POWER ROLLER	VIBRATED COMPACTOR	WATER LORRY	CONCRETE MIXER MACHINE	CONCRETE VIBRATOR	CEMENT IN M.T.	SAND IN m^3	METAL 40MM IN m^3	METAL 20MM IN m^3	RR IN m^3
1	4	10	3	3	4	2	3	1911.13	3772.13	3531.74	4012.52	816.63

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6.8.4. PHYSICAL AND FINANCIAL PROGRAM

Sl. No	Description	I Year		II Year		Total	
		Quantity	Amount	Quantity	Amount	Quantity	Amount
	Earth work excavation						
1	Channel	16470	447710	38430	1044656	54900	1492366
2	Foundation	500	39905	1584.31	126444	2084.31	166349
3	Bund	53165	3832272	136417.05	9833296	189582.05	13665568
	Total		4319887		11004396		15324283
	Concrete						
4	PCC M 10 ,20	25	128873	76.5	394351	101.50	523224
5	PCC M 10 ,40	174.50	829931	1549.06	7368820	1723.56	8198751
6	PCC M 15 40, 20	320	2446802	1837.89	14052976	2157.89	16499778
7	PCC M 15 20	66	441065	264.78	1769475	330.78	2210540
8	PCCM 20 grade 20	80	529195	294.90	1950746	374.90	2479941
9	RCC M 20grade20	200	1639004	1771.28	14614237	1971.28	16253241
	Total		6014870		40150605		46165475

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6.8.5. CONSTRUCTION METHODOLOGY

Sl. No.	Description of Items	Rainy Season			Water Regulation			Working Months						Rainy Season			Water Regulation		Total
		10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
	Earth work excavation																		
1	Channel			6150			10320	5490	5490	5490	5490	5490	5490				5490		54900
2	Foundation			200			300	230	230	230	230	230	230				204.31		2084.31
3	Bund			20000			33165	19500	19500	19500	19500	19500	19500				19417.05		189582.05
																			246566.36
	Concrete																		
4	PCC M 10 ,20			12			13	11	11	11	11	11	11				10.5		101.50
5	PCC M 10 ,40			70			104.5	225	225	225	225	225	225				199.06		1723.56
6	PCC M 15 40, 20			140			180	265	265	265	265	265	265				247.89		2157.89
7	PCC M 15 20			20			46	40	40	40	40	40	40				24.78		330.78
8	PCCM 20 grade 20			30			50	45	45	45	45	45	45				24.90		374.90
9	RCC M 20 grade 20			80			120	255	255	255	255	255	255				241.28		1971.28
																			6659.91

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7.ENVIRONMENTAL COMPONENT

GOVERNMENT OF TAMILNADU

PUBLIC WORKS DEPARTMENT

WATER RESOURCES DEPARTMENT

IMPLEMENTATION AND MONITORING OF ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK FOR MANIMUKTHANADHI SUB BASIN OF VELLAR BASIN IN KALLAKURICHI DISTRICT.

Executive Engineer, PWD/WRD
Environmental Cell Division,
Tharamani, Chennai-113.

7.1 SOCIO ECONOMIC DETAILS OF MANIMUKTHANADHI SUB BASIN

Manimukthanadhi Sub basin area spreads over 289 villages of 3 taluk viz., Kallakurichi, Sangarapuram and Chinna Salem. This sub basin area fall in to 5 blocks viz., Kallakurichi, Thiyagadurugam, Sankarapuram, Rishivanthiyam and Chinna Salem Blocks in Kallakurichi District

7.1.1 Population:

Population in the project area proposed in Manimukthanadhi sub basin is 0.68 million, out of which 0.34 million are male and 0.34 million are female. In the project area, total population is rural population.

Sl.No.	Block		Population		
		Total/Urban/Rural	Total	Male	Female
1	Kallakurichi	Total	149579	76024	73555
		Rural	149579	76024	73555
		Urban	-	-	-
2	Thiyagadurugam	Total	102612	51295	51317
		Rural	102612	51295	51317
		Urban	-	-	-
3	Sankarapuram	Total	151374	76343	75031
		Rural	151374	76343	75031
		Urban	-	-	-
4	Rishivanthiyam	Total	143242	72502	70740
		Rural	143242	72502	70740
		Urban	-	-	-
5	Chinna Salem	Total	133892	67574	66318
		Rural	133892	67574	66318
		Urban	-	-	-
Total		**Total**	**680699**	**343738**	**336961**
		Rural	**680699**	**343738**	**336961**
		Urban	-	-	-

(Source: Census of India 2011)

7.1.2 Rural Poverty

In Manimukthanadhi sub basin, 37.28% people are in BPL category. Whereas the district level poverty in Kallakurichi District was 38.63%. Rishivanthiyam (48.20%) block is stricken by high incidence of poverty within this sub basin area.

7.1.3 Gender

In Manimukthanadhi sub basin, the sex ratio is 980 which is lower than the state average of 995 (number of females per thousand males).

7.1.4 Households

Sl.No,	Block	Number of households
1	Kallakurichi	35959
2	Thiyagadurugam	24312
3	Sankarapuram	34435
4	Rishivanthiyam	30948
5	Chinna Salem	33644
Total		159298

(Source: Census of India 2011)

7.1.5 Literacy

In this sub basin, 67% of male are literate and 50% of female are literate.

Sl.No.	Block		Literates		
		Total/Urban/Rural	Total	Male	Female
1	Kallakurichi	Total	88924	51799	37125
		Rural	88924	51799	37125
		Urban	-	-	-
2	Thiyagadurugam	Total	57835	33430	24405
		Rural	57835	33430	24405
		Urban	-	-	-
3	Sankarapuram	Total	90322	51273	39049
		Rural	90322	51273	39049
		Urban	-	-	-
4	Rishivanthiyam	Total	82035	47048	34987
		Rural	82035	47048	34987
		Urban	-	-	-
5	Chinna Salem	Total	82035	47048	34987
		Rural	82035	47048	34987
		Urban	-	-	-
Total		Total	400556	230710	169846
		Rural	400556	230710	169846
		Urban	-	-	-

(Source: Census of India 2011)

7.1.6 SC/ST population

There are 238706 SC population in the proposed project villages of the sub basin and all are Rural dwellers.

There are 2729 ST population in the proposed project villages of the sub basin and all are Rural dwellers.

Sl. No.	Block	Total/ Urban/ Rural	ST Population			SC Population		
			Total	Male	Female	Total	Male	Female
1	Kallakurichi	Total	155	79	76	55944	28160	27784
		Rural	155	79	76	55944	28160	27784
		Urban	-	-	-	-	-	-
2	Thiyagadurugam	Total	238	114	124	42920	21416	21504
		Rural	238	114	124	42920	21416	21504
		Urban	-	-	-	-	-	-
3	Sankarapuram	Total	1564	791	773	42313	21365	20948
		Rural	1564	791	773	42313	21365	20948
		Urban	-	-	-	-	-	-
4	Rishivanthiyam	Total	423	220	203	48368	24585	23783
		Rural	423	220	203	48368	24585	23783
		Urban	-	-	-	-	-	-
5	Chinna Salem	Total	349	198	151	49161	24683	24478
		Rural	349	198	151	49161	24683	24478
		Urban	-	-	-	-	-	-
Total		**Total**	**2729**	**1402**	**1327**	**238706**	**120209**	**118497**
		Rural	**2729**	**1402**	**1327**	**238706**	**120209**	**118497**
		Urban	-	-	-	-	-	-

(Source: Census of India 2011)

7.1.7 Landholings:

Category	Size of holdings	Numbers	Percentage
Marginal	Below 1.00 Ha	10245	60.75
Small	1.00 – 2.00 Ha	5510	32.68
Medium	2.00 – 5.00 Ha	985	5.84
Large	5.0 ha & above	123	0.73
Total		16863	100.00

Above table reveals that the marginal farmers account for 61% in this sub basin land holders and followed by small farmers.

7.1.8 Women landholders:

There are about 11454 women land cultivators and 61395 women agricultural labourers in the sub basin area.

Sl.No.	Block	Total Workers	
		Cultivators	Agricultural Labourers
1	Kallakurichi	2318	17226
2	Thiyagadurugam	1438	12998
3	Sankarapuram	2391	6993
4	Rishivanthiyam	2507	8122
5	Chinna Salem	2800	16056
	Total	**11454**	**61395**

(Source: Census of India 2011)

7.1.9 Irrigation Access:

Irrigation is carried through 34 tanks and 10 anicuts under the control of WRD of PWD in this sub basin. The following ayacut details is for the work has to be carried out in Kallakurichi district.

Tank Ayacut – 47 Nos	:	3459.98 Ha
Anicut Ayacut – 18Nos	:	951.89 Ha
Total	:	**4411.87 Ha**
For Present Project Area	:	
Tank Ayacut - 34Nos	:	2669.90 Ha
Anicut Ayacut - 10Nos	:	160.25 Ha
Total	:	**2830.15 Ha**

7.1.10 Key Social issues:

Manimukthanadhi sub basin area is principally an agricultural area. Prevailing climate change has a negative impact on frequency of rainfall and led to non-availability of reliable irrigation water. Hence marginal farmers are forced to leave the agriculture. Repair and Rehabilitation of the irrigation structures in this sub basin will led to increase the storage capacity of the tanks and anicuts. So that we can store the rainwater effectively. Conflicts for water sharing have become an inevitable problem among tank water users. Hence coordination between water user associations has to be encouraged and farmers should be trained in effective water management practices through exposure visits and trainings.

7.2 Stakeholder Consultations and Feedback.

7.2.1 Walkthrough Surveys:

Walk Through Survey were conducted through 34 villages situated in Manimukthanadhi sub basin during the month of June and July 2020. Around 732 nos. of people from forming and allied sector participated and shared their views and expectations. Officials from Water Resources Department (WRD), Agriculture Department, Horticulture Department, Tamil Nadu Agriculture University (TNAU), Agriculture Engineering Department (AED), Animal Husbandry and Fisheries Department jointly conducted the survey. Regarding WRD, 34 tanks, 10 anicut and supply channels for a total length of 40.15 km in Manimukthanadhi Sub Basin were selected and proposed for rehabilitation under TNIAMP Phase III. Interaction with farmers was made for improving agriculture and allied activities.

7.2.2 Consultation/Awareness Meetings:

Details of the Walkthrough survey and Consultation/Awareness meetings are given below

Sl. No	Date of Visit	Names if the Villages Visited	Awareness Programme (No.of farmers attended) (Prepare the list of farmers with acknowledgement seperately and attach)	Walk - Through Survey (No.of farmers Participated) (Prepare the list of farmers with acknowledgement seperately and attach)	WUA Formed / To be Formed
(1)	(2)	(3)	(4)	(5)	(6)
1	01.06.2020	Peruvangur	20	18	To be formed
2	01.06.2020	Thandalai	27	15	To be formed
3	02.06.2020	Thirukkanangur	22	15	To be formed
4	01.06.2020	Ka.Alambalam	15	12	To be formed
5	01.06.2020	Alathur	24	19	To be formed
6	02.06.2020	Chittalur	10	7	To be formed
7	08.07.2020	Kalayanallur	14	10	To be formed
8	08.07.2020	Kalayanallur	18	15	To be formed

9	06.07.2020	Kudiyanallur	20	12	To be formed
10	29.06.2020	Koothakkudi	14	8	To be formed
11	03.07.2020	Ninnaiyur	20	9	To be formed
12	02.06.2020	Pallagacheri	26	11	To be formed
13	18.06.2020	Prithivimangalam	15	8	To be formed
14	03.07.2020	Sithathur	26	14	To be formed
15	02.06.2020	Thyiyagai	24	13	To be formed
16	02.06.2020	Udayampattu	28	16	To be formed
17	03.07.2020	Udayanatchi	19	8	To be formed
18	18.06.2020	VadaThorasalur	30	16	To be formed
19	26.06.2020	Chellampattu	21	9	To be formed
20	26.06.2020	Kosapadi	15	11	To be formed
21	08.07.2020	Manjaputtur	22	13	To be formed
22	21.07.2020	Pandaiam	30	20	To be formed
23	26.06.2020	Poikunam	15	7	To be formed
24	21.07.2020	Pootai	18	13	To be formed
25	26.06.2020	Sembarampattu	30	20	To be formed
26	21.07.2020	Urangani	20	15	To be formed
27	08.07.2020	Vadachettiyandai	18	7	To be formed
28	22.07.2020	Kallaerikuppam	20	10	To be formed
29	22.07.2020	Palayam	27	8	To be formed
30	22.07.2020	Palayakorakachanda	27	7	To be formed
31	10.07.2020	Pallipattu	22	12	To be formed
32	10.07.2020	Velanmandal	18	8	To be formed

33	16.06.2020	Kacharayapalayam	30	12	To be formed
34	16.06.2020	Vadakanandal	27	14	To be formed
		Total	**732 Nos**	**412 Nos**	

7.2.3 Stakeholder Feedback:

The feedback of Walkthrough Survey, Consultation/Awareness meetings and planned activities for this sub basin in Phase III of TN IAM Project are given below.

i). WRD Related

Sl. No	Date of Visit	Names of the Villages visited	Outcome of walk through survey and discussions with farmers	
			Works Suggested by Farmers	Works finalized by WRD Officials
1	01.06.2020	Peruvangur	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.
2	01.06.2020	Thandalai	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.
3	02.026.2020	Thirukkanangur	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.
4	01.06.2020	Ka.Alambalam	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.
5	01.06.2020	Alathur	Bund Strengthening, Repairs to sluice, Repairs to weir, desilting supply channel, Demarcation of Boundary	Bund Strengthening, Repairs to sluice, Repairs to weir, desilting supply channel, Demarcation of Boundary stone.

6	02.06.2020	Chittalur	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.
7	08.07.2020	Kalayanallur	Sluice repair, Tank desilting and channel desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.
8	08.07.2020	Kalayanallur	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.
9	06.07.2020	Kudiyanallur	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.
10	29.06.2020	Koothakkudi	Bund Strengthening, Repairs to sluice, Repairs to weir, desilting supply channel, Demarcation of Boundary	Bund Strengthening, Repairs to sluice, Repairs to weir, desilting supply channel, Demarcation of Boundary stone.
11	03.07.2020	Ninnaiyur	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements
12	02.06.2020	Pallagacheri	Sluice repair, Tank desilting and channel desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements
13	18.06.2020	Prithivimangalam	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements

14	03.07.2020	Sithathur	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.
15	02.06.2020	Thyiyagai	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.
16	02.06.2020	Udayampattu	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.
17	03.07.2020	Udayanatchi	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.
18	18.06.2020	VadaThorasalur	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.
19	26.06.2020	Chellampattu	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.
20	26.06.2020	Kosapadi	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements
21	08.07.2020	Manjaputtur	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements

22	21.07.2020	Pandalam	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements
23	26.06.2020	Poikunam	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.
24	21.07.2020	Pootai	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements
25	26.06.2020	Sembarampattu	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements
26	21.07.2020	Urangani	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements
27	08.07.2020	Vadachettiyandal	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements
28	22.07.2020	Kallaerikuppam	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.
29	22.07.2020	Palayam	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.

30	22.07.2020	Palayakorakachanda	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.
31	10.07.2020	Pallipattu	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.
32	10.07.2020	Velanmandal	Sluice repair, Tank desilting and channel desilting , bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements
33	16.06.2020	Kacharayapalayam	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.
34	16.06.2020	Va dakanandal	Sluice repair, Tank desilting, bund strengthening, removal of vegetation in the tank	Bund Standardization, Sluice, Weir & Supply Channel improvements.

In general farmers were requesting for the works under TNIAMP are as follows. Weir repair, Sluice repair, Supply channel improvements and Bund Standardization.

ii). Agriculture Related

It was inferred that the farmers are mostly relying on conventional farm methodologies and following same cropping pattern. Hence to make them adopting new methodologies, the following activities are proposed. Farmers can be educated through introduction of field demonstration of improved production technology. Farmer's field schools to educate farmers shall be operationalized at block levels followed by capacity building through exposure field visits. During the survey, it was reported by the farmers about reduced soil fertility; hence, it was proposed to encourage the farmers for green manuring by adopting technologies like vermicomposting, practicing rice fallow pulses cropping in order to enhance the soil fertility.

Another common problem prevailing in agriculture is water scarcity. Farmers have reported that often they cannot avail water for their crops up to full maturity. For this, it was proposed to switch from conventional paddy cultivation method to System of Rice Intensification (SRI). Through this, they can save appreciable quantity of water and also seed. It was also proposed to divert from high water guzzling crops to less water consuming crops like maize, oil seeds and horticulture crops.

It was reported by farmers that they are facing acute loss due to failure of crops due to want of water whenever there is shortage of rainfall. To address this, it was proposed to introduce farm ponds as a mechanism for harvesting and storing the rain water in the lands of selected farmer's preferably marginal and small farmers in order to supplement their terminal irrigation needs.

iii). Horticulture Related

Most of the farmers in this sub basin are following the conventional methods of cultivation. Hence to make them adopt new methodologies the following activities are proposed. Farmers can be educated through introduction of field demonstration of improved production technologies. During the survey it was reported by the farmers about the reduced soil fertility. Hence it was proposed to encourage the farmers to apply farmyard manure and compost for Horticulture crop. Another common problem prevailing in this sub basin is water scarcity. Farmers have reported that they cannot avail water for their crops up to full maturity. For this farmers will be convinced to take up short duration, low water requiring Horticulture crop like vegetables.

iv). Livestock Related

Livestock production is widely practiced in this sub basin. Milk collection, Storage and processing is being carried out both by the cooperative and private diary processors in this sub basin. Disease diagnostic facilities and veterinary facilities at the institutions are insufficient. By strengthening the infrastructure facilities animal health measures will be prevented effectively. Another major issue is lack of animal identification system and recording constraints the disease control and planned breeding intervention. By linking Government of India animal identification system program, we can enable ICT based MIS.

7.2.4 Summary of the interventions proposed:

i). WRD:

- 34 nos. of tanks 10 no. of anicut and supply channels for a total length of 40.15km were selected and proposed for rehabilitation under Phase III of TN IAM Project
- Weir repair, Sluice repair, Supply channel improvements and Bund Standardization are proposed to be carried out.

ii). Agriculture Marketing:

- Improving farmers access to Market by Supporting the Formation of New Farmer Producer Company

- Existing Farmer Producer Company will give consultation support and Matching grant for business expansion
- Promoting Agri Enterprises by Facilitating PPP Mechanism and Supporting Agro-entrepreneurs to provide services to farmers

iii). TNAU:

- Water Management for sustainable paddy production through AWDI
- Drought resistant/ Flood tolerant / Salt tolerant high yielding rice variety
- Fall Army Worm technology capsule to enhance the Productivity of Maize
- Demonstration of Improved production technique with various oil seed crops
- Sustainable sugarcane initiative
- Production of Topioca under precision farming mode

iv). Agriculture Department:

- Green Manure Cultivation
- System of Rice Intensification (SRI)
- Rice follow pulses
- Crop diversification
- Promotion of pulses production
- Revival of Oil seed production
- Cono weeding operation in SRI Paddy cultivation
- Farmers Field Schools
- Integrated Pest Management villages
- Seed village program for Pulses, Groundnut

v). Fisheries:

- Fish Culture in Long Seasonal Irrigation Tanks
- Fish Culture in Short Seasonal Irrigation Tanks
- Fishing Implements (Dragnet/Gillnet)
- Aquaculture in Farm Ponds.
- Fish Seed Rearing in Cages
- Earthen Fish Seed Rearing and Culture Farm

vi). Horticulture Department:

- Demonstration in Bhendi, Brinjal, Green Chillies, Tapiaco, Bitter Gourd, Snake Gourd and Maringa.
- Encourage farmers to use Bio Pesticides (Bio Village)
- Micro Irrigation

7.3 Screening for Construction and Civil Works (WRD, AED, Other IAs).

Summary of Construction / Civil works planned:

7.3.1 Water Resources Department:

S.No	Component	Numbers	Size/Length	Estimated Cost (in Lakhs)
1	Tanks	34	-	679.93
2	Anicuts	10		275.27
3	Supply Channels	-	40.15km	20.09

7.3.2 Agriculture Engineering Department:

S.No	Type of Structure	Numbers	Size	Estimated Cost(in Lakhs)	No. of Villages Covered
1	Form Pond	10	28.0x28.0x1.5m	7.50	10Nos.

7.3.3 Summary of contract packages:

Work regarding WRD will be done as two packages

S.No	Package No	Ayacut in Ha	No of Tanks	Bund		Model Section		Sluice		Weir		Rehabilitation to supply Channel		Rehabilitation to Anicut/ Surplus Course		Total Amount in Lakhs
				Length in (m)	Amount in Lakhs	No	Amount in Lakhs	No	Amount in Lakhs	No	Amount in Lakhs	Length in (km)	Amount in Lakhs	Length in (m)	Amount in Lakhs	
1	1	2669.90	34	45025	296.95	56	42.19	44	253.47	7	60.08	40.15	20.09	-	300.51	975.29

7.3.4 Screening Details:

Screening checklist is attached for the intervention proposed by WRD

WRD ESMF Monitoring Table (Environmental)

Total TNIAMP Packages	Total No. of TNIAMP Tanks			Number of Tanks above 7m height	Number of Tanks with History of floods / breaches or in seismic zone for the past 10 years	Number of works near Forest Wildlife areas	No of activities in the proximity of Industrial areas	Number of tanks under the oversight of the state Dam safety panel
	Tanks	Anicuts	Supply Channel					
1	34	10	40.15 km	NIL	NIL	NIL	NIL	NIL

WRD ESMF Monitoring Table (Social)

Total TNIAMP Packages	Total No. of TNIAMP Tanks			Number of TNIAMP Tanks With encroachments	Number of TNIAMP Tanks where shelters, shops and farmers have been Physically relocated.	Number of TNIAMP Tanks where residents / farmers / Utilies / shops etc adversely affected.	Number of TNIAMP works (Tanks/Anicuts/supply channel) with labour campsTanks with labour camps
	Tanks	Anicuts	Supply Channel				
1	34	10	40.15 km	NIL	NIL	NIL	NIL

7.4 Environment and Social Management Plan (ESMP):

The Environmental and Social Management Plan (ESMP) integrates the baseline conditions, impacts likely to occur, and the measures which need to be implemented for amelioration of adverse impacts for proposed sub-projects. The ESMP shall give particular attention to project sustainability issues such as EHS, construction camps and site office, prevention of pollution, user conflicts, etc. This detail is to be included in Bid document and to be implemented by the prospective Contractor.

Screening for Environmental and Social aspects in the sub basin has been done as per the Environmental and Social issues listed above and the Individual Screening of the tanks in this sub basin also has been carried out. Based on the screening mentioned above there is no high priority tanks has been identified. Hence no ESMP monitoring will be carried out all the tanks, anicuts and supply channels will be monitored during ESMF monitoring.

Envisaged impacts and mitigation measures:

- **Disposal of excavated earth:** Since the excavated / desilted earth is proposed to be utilized for forming bunds in tanks and channels, no earth has to be disposed.
- **Disposal of debris from rehabilitation/restoration of hydraulic structures:** Quantity of stone / cement masonry and concrete debris that would be generated, the remains after reuse will be carried away by the contractor to fill the nearby areas pointed out by the engineer in charge of work. The disposal will be decided in consultation with the local community and V.A.Os.
- **Air Pollution:** Heavy equipment including power rollers, tippers, lorries, water lorries, etc., are planned to be used. Pollution from exhausts of these vehicles and dusts from hauling of material will cause air pollution. Mitigation measures for keeping the pollution in control includes (1) Monitoring the proper functioning of construction equipment to minimize exhaust. (2) Educate the operators and drivers for optimal idling of machines and equipment. (3) Covering the stockpiled silt and trucks which are hauling silt, sand, and other loose materials will be insisted or at least two feet of freeboard will be maintained in trucks during hauling

- **Health and safety needs of workforce employed:**

In addition to necessary monitoring, contractors and site in charge personal will be educated and insisted to

i. Provide Safe access to the job sites
ii. Keeping Passage ways, walkways, and ramps free of materials, scraps or obstructions
iii. Keeping First Aid box readily available at construction sites
iv. To maintain contact with nearest nursing homes/clinics/primary health centre to deal with any emergency at site
v. To ensure availability of vehicle at construction site to meet emergency situation
vi. To comply with all the precautions as required for the safety of the workmen as per labour laws as applicable to this project
vii. To strictly follow the statutory child labour act

viii. To provide necessary personal protective equipment such as helmets, hand gloves, safety shoes, nose masks, safety goggles to the workers as per act.

ix. To provide mask and safety kit to all the labours and ensure the labours are free from Covid-19 by means of Thermal scanning & Pulse oximeter testing

❖ **Public safety:** Warning sign boards will be provided along the construction sites in Tamil/ English

7.4.1 Plan of activities for Environmental Monitoring and Awareness:

i). Environmental Monitoring:

It is proposed to study the impacts due to interventions implemented in the sub basin by collecting field samples at key points both during pre-implementation and post project periods. Thus collected field samples will be analysed at laboratories for various influencing parameters and results will be communicated to MDPU and line departments concerned for future reference. Based on the results, awareness will be created during capacity building meetings for the water users of the respective tanks. The manner in which samples to be collected are summarized below,

Water samples from the 11 nos. of tanks in which the Fisheries Department interventions will takes place will be collected. These collected water samples will be tested for key physical, chemical and biological characteristics along with pesticides and heavy metals.

ii). Monitoring and reporting compliance of ESMP, ESMF and updating GRM:

The works in the Priority tanks will be inspected once in a 3month by the Environmental cell engineers. All the other tanks will be inspected once in 6 months for compliance of ESMF. The reports regarding compliance of environmental safety procedures and recommended mitigation measures will be submitted to the MDPU and a copy will be marked to the nodal officer concerned for necessary corrective measures if any to be taken. The expenditure involves photographic and documentation charges, conveyance arrangement to work sites. In this sub basin no high priority tanks have been identified. ESMF monitoring will be done by the Environmental Engineers of this division.

Implementation of GRM provisions will be monitored by the Environmental Cell Division Engineers in all packages of this sub basin. A monthly report on the Grievances received and the action taken shall be sent to the respective Environmental Cell Division for review and submission to the MDPU.

iii). Propagation of site safety and Environmental Codal Procedure Awareness:

Usually contractors and site workers will focus on speedy achievement of work in volumetric basis and they rarely focus on safety and environmental aspects during the work. To make them aware about the norms and codal practices, it is proposed to issue pamphlets with pin pointed safety tips and environmentally safe practice to contractors, site-in-charges and labourers.

To create the awareness among the public about Environmental aspects to remove or reduce the impacts due to the Environmental problems is essential. Hence to create the awareness, pamphlets will be issued to the people and also awareness painting will be created in the permanent structures in the tanks.

iv). Capacity Building activities for WRD Engineers, Contractors :

One-day capacity building training programme will be conducted for WRD Engineers, contractors, members of WUA and stake holders to educate about ESMF, ESMP and GRM activities. It is proposed to conduct one training for this sub basin

v). Safeguard Training for Implementing Agencies:

Safeguard training will be conducted for the WRD officials and the TNIAMP implementing agencies who belongs to this sub basin. It is proposed to conduct one training for this sub basin.

7.5 ESMF application in Livelihood Support Interventions:

Environmental and Social Management Framework for the interventions by WRD will be monitored by the respective Environmental Cell division and a biannual report will be submitted to the MDPU. Summary of the details of the livelihood support interventions planned in the sub basin and the applicable ESMF Actions that would be implemented in the following sectors is as below:

i). WRD Related

Constraints & Challenges	Suggested Mitigation Measures
Disposal of construction debris on farmland, water courses etc. resulting in blocking natural drainage	The debris of the dismantled structures to be used for leveling borrow areas
Accidents/disease incidents for workers and in labour camps and lack of amenities	For construction activities, refer to health and safety guidelines, and provide protective equipment (helmets, protective gloves and shoes, welding goggles etc.) as may be needed
Possibility of engagement of child labour, unequal wages to women workers	Ensure compliance with national Act on child labour and minimum wage Act

Risk of disposal of silt on farmlands	Silt disposal on farmlands only after consultation with either individual farmer or with WUA/Gram Panchayat
Dumping of Iron and concrete debris within canal and/or near banks	Identify proper disposal sites/designated landfills and mechanism for debris and cost it as part of vendor contract
Air pollution and noise pollution due to increased vehicular movement and construction equipment	Providing ear plugs and other safety equipment to protect workers
Impact of Covid-19	The labours should be tested frequently by using thermal scanning and pulse oximeter & Safety kit like mask should be given to the all labourers

ii). Agriculture, TNAU and Horticulture Related

Constraints & Challenges	Suggested Mitigation Measures
Inferior quality seeds and planting material are generally used by the farmers	Quality planting materials supplied through department of horticulture. The HB seeds are available from private sources and it will be procured and supplied to the farmers by following the WB procurement norms.
Limited planting materials available from Govt sources	Seed are supplied to the farmers by the department after procuring the HB seeds through tender system.
Adverse climatic condition	Drought resistant and high yielding crops like chillies and other vegetable crops are to be suggested.
Low price for produce especially for vegetables	Staggered planting methods recommended to the farmers to maintain the price fall in vegetables especially during peak period of harvest. It is recommended to choose varieties suited for early and late sowings.
Problem soils.	To overcome the problem soil, the farmers will be advised to take up soil samples and test at STL Villupuram and STL Perambalur
Improper irrigation practices like furrow and basin irrigation.	Drip irrigation with fertigation is to be introduced in this project.

iii). Agriculture Marketing Related

Constraints & Challenges	Suggested Mitigation Measures
Non adaption of Package of practices for improving quality of grains.	Promotion of pre harvest practices for bridging gap identified by DoA & Horti
Non adaption of Post-Harvest practices	Promotion of post-harvest practices for bridging gap identified by DoA & Horti, Marketing
Lack of market awareness	Awareness about sources of market information & intelligence

v).Agricuiture Engineering Related

Constraints & Challenges	Suggested Mitigation Measures
Silt/sand deposition on agricultural fields, low lying seasonal wetlands, choking of natural draining/water courses to excess drain etc.,	Check quality of removed silt and tank bed material before allowing farmers to use it As far as possible, use silt (if suitable) in strengthening the tank bunds
Soil compaction on fields/ farms due to movement of heavy machinery	Plan heavy vehicle and machine movement route that avoid productive fields; and if soil compaction on farmers field is unavoidable plough field after construction phase is over
Incidence of local water logging and stagnation of water leading to increased mosquito breeding and spread of vector borne disease	Ensure that approved anti-mosquito methods are used in case of observance of breeding mosquito population near construction and rehabilitation sites.
Selection of construction sites across or near the electrical line	It should be avoided. Whether it is unavoidable necessary precautions should be followed.

iv). Fisheries Related

Constraints & Challenges	Suggested Mitigation Measures
Local depletion of larval and juvenile organisms for pond stocking	Examine of larvae and juveniles in nurseries or hatcheries should be ensured
Clearing/conversion of coastal wetlands for construction of ponds	Examine of ponds in area of particular ecological significance
Restrictions imposed for fishing by poor and marginalized and for those with traditional rights	Fairness in contracting tanks for fishing to private vendors – access to fishing by the poor and marginalized should be ensured

v). Livestock Related

Constraints & Challenges	Suggested Mitigation Measures
Spread of contactable diseases	Ensure regular animal checkup through extension services and organize animal health camps in project supported sub-basins
Poor and marginal farmers left out of project benefits	Promote stall feeding and provide technical support for developing low cost animal sheds
Increased possibility of greenhouse gases from livestock	Involve TN Veterinary University for various technical inputs

7.6 Beneficiary Targeting and Inclusion.

Beneficiaries for livelihood support interventions by the activities of Agriculture, TNAU, horticulture, Agri marketing, AED, Fisheries and Animal husbandry will be selected during project implementation and hence have not been discussed in their respective DPRs. However, orientation will be given to the IAs to select direct project beneficiaries in such a manner that landless, small and marginal landholders/farmers, SC/ST households will be benefitted and the same will be monitored by the nodal officers of respective line departments.

7.7 Key Gender Actions

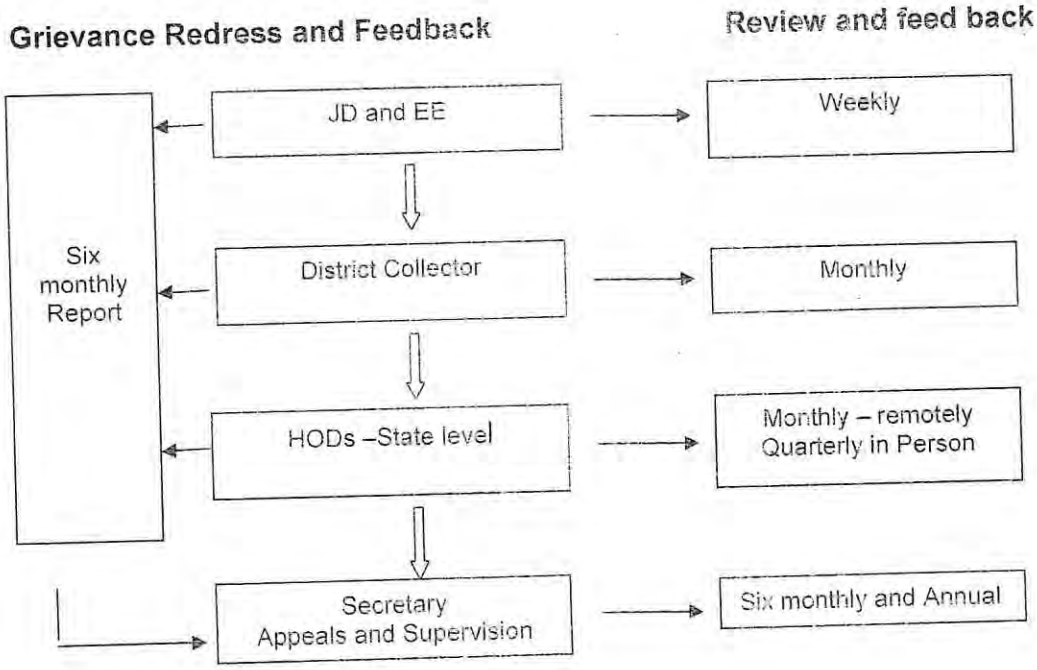
As per the socio economic profile, it can be inferred that the Manimukthanadhi sub basin has an almost equal Male: Female ratio. It can also be inferred that in the Cultivators and Agricultural labourers segment, men are more predominant than the women. In lieu with the ESMF and Gender Action Plan, the line departments will be instructed to include more women in WUA, FPC, FPG membership and leadership and women farmers as beneficiaries of agriculture, irrigation, farm ponds, livestock, fisheries, agriculture and horticulture interventions. Also, it will be insisted that the line departments shall provide trainings to women on WUA and livelihood support activities. This shall ensure that a proper gender balance be maintained in the sub basin.

7.8 Labour Management:

Capacity Building Trainings on Implementation of ESMP and GRM for WRD Engineers, Contractors and WUA members, Safeguard training to all implementing agencies will be conducted in the Manimukthanadhi sub basin.

7.9 Grievance Redressal Mechanism:

GRM will be monitored for all the packages of TNIAMP in the Manimukthanadhi Sub Basin. Under GRM provisions, separate register for GRM and a box for receiving the Complaints and Grievances will be maintained at the O/o the Executive Engineer, Vellar Basin Division, Vridhachalam. In addition to the above a Display board for GRM containing the address and phone number of the Executive Engineer to whom the Grievances and Complaints should be addressed will be provided in each tank in which the rehabilitation works are carried out under TNIAMP. A monthly report on the Grievances received and the action taken will be received at the respective Environmental Cell Division for review and submission to the MDPU. If any incompliance is found in the Grievance Redressal Mechanism, the same will be escalated to the MDPU.



Contact Details of Officers Responsible at Departmental Level for GRM in this Sub Basin

S.No	Department	Designation	Contact Information
1	Water Resources Department	Executive Engineer, WRD, Vellar Basin Division, Vridhachalam	Ph.No: 04146-230829 E-mail: eepwdwrovellarvri@yahoo.co.in
2	Agricultural Engineering Department	Executive Engineer	Ph.No: 04146-259888 E-mail: aedeevpm@tn.nic.in

3	Agricultural Marketing	Deputy Director	Ph.No: 9443787717 E-mail:dbab.kallakurichi@gmail.com
4	Agricultural Department	Joint Director	Ph.No: 04146-222291 E-mail: jdagrikal@gmail.com
5	Horticulture	Deputy Director	Ph.No: 04151-290110 E-mail: adhkallakurichi@gmail.com
6	Animal Husbandry	Regional Joint Director	Ph.No: 04151-290110 E-mail: aniadhkki@gmail.com
7	Fisheries	Assistant Director	Ph.No: 04146-259329 E-mail: adfinlandvpm1@gmail.com
8	TNAU	Professor and Head, Regional Research Station, Vridhachalam	Ph.No: 04143 – 238231 E-mail: arsvri@tnau.ac.in

Assistant Engineer PWD WRD,
Environmental Cell Section-IV,
Vridhachalam.

Asst.Exe. Engineer, PWD, WRD,
Environmental Cell Sub Division –I,
Taramani, Chennai-113.

Executive Engineer, PWD, WRD,
Environmental Cell Division,
Taramani, Chennai-113.

Name of work:
Implementation and Monitoring of Environmental and Social Management Framework for Manimukthanadhi Sub Bain of Veilar Basin in Kallakurichi District.

Estimate Amount Rs.7.00 Lakhs

DETAILED ESTIMATE

S.No	Description of Work	No	Measurement			Contents	
			L	B	D		
I.	**Environmental Social Monitoring of river basin including periodical water quality testing and documentation**						
1	**Collection and Testing of Water Samples**						
i).	Testing Water Samples collected from tanks for a period of Two years	11x2x2				44	Nos
2	**Monitoring of Implementation of ESMP & GRM**						
i).	Engaging Technical Assistant Grade II for assisting the Field officers for collecting the data, preparation of reports, documents and for other office work etc., (Rs.844+(10%)84=Rs.928) & (26days/month i.e. 928*26=Rs.24128 per month)		1x4 Months			4	Months
ii).	Hiring Jeep driver on service contract basis for the department vehicle of the sub division (Rs.592+(10%)59=Rs.651) & (26days/month i.e. 651*26=Rs.16926 per month)		1x3 Months			3	Months
iii).	Hiring of Private Vehicle and Conveyance charges	2500				2500	km
iv).	Labour charges for collecting the water samples including all and purchase of bottles and sampling accessories, Documentation of test results including labour charges	LS					LS
v).	Propagation of Environmental Awareness through stickers, pamphlets.	LS					LS

vi).	Documentation of the entire activities, Preparation of sub-basin maps of all size and preparation of inference reports/ completion reports and activities reports & Upgradation of computer and accessories.	LS					LS
II	**Conducting Capacity Building Training on Implementation of ESMP and GRM for the WRD Engineers, Contractors and WUA members – 30Nos + 10 Organisers**						
i).	Conducting Capacity Building Training on Implementation of ESMP and GRM for WRD Engineers, contractors and WUA members and Conducting Safeguard Training to all Implementing Agencies	2				2	Nos
III	GST @12% for item 2 of I and item II mentioned above	LS					LS
IV	Labour Welfare Fund 1%	LS					LS
V	Petty Supervision & Unforeseen items etc., complete	LS					LS

Assistant Engineer PWD WRD,
Environmental Cell Section-IV,
Vridhachalam.

11/9/2020

Asst.Exe. Engineer, PWD, WRD,
Environmental Cell Sub Division –I,
Taramani, Chennai-113.

Executive Engineer, PWD, WRD,
Environmental Cell Division,
Taramani, Chennai-113.

11/9/2020

Name of work:
Implementation and Monitoring of Environmental and Social Management Framework for Manimukthanadhi Sub Bain of Vellar Basin in Kallakurichi District.

Estimate Amount Rs.7.00 Lakhs

DATA SHEET

S.No	Qty		Description	Rate in Rs.	Per		Amount in Rs.
I	**Environmental Social Monitoring of river basin including periodical water quality testing and documentation**						
1	1	No	Testing charges for the parameters such as Physical, Chemical (including Heavy Metals), Biological and Pesticides in the water samples for a period of two years (Rate including 18% GST)	7316	1	No	7316
2	1	Day	Engaging Technical Assistant Grade II for assisting the Field officers for collecting the data, preparation of reports, documents and for other office work etc., (Rs.844+(10%)84=Rs.928)	928	1	Day	928
3	1	Day	Hiring Jeep driver on service contract basis for the department vehicle of the subdivision (Rs.592+(10%)59=Rs.651)	651	1	Day	651
II	**Conducting Capacity Building Training on Implementation of ESMP and GRM for the WRD Engineers, Contractors and WUA members – 30Nos + 10 Organisers**						
1	1	Event	Hall rent, Mike set arrangements, Chair arrangements and lighting arrangements and printing of Banner etc.,	12000	1	Event	12,000
2	L.S		Labour charges for hall arrangements and cleaning works, meals serving to participants etc.	-	-	-	2,000
4	1	Event	Documentation and Photographic Charges	4000	1	Event	4,000
5	40	Person	Resource materials, File, Pens & Note pad (Eco Friendly) for participants- 30 nos +10 No organisers	300	1	Person	12,000
6	40	Person	Refreshment Arrangements - 40 nos	50	1	Person	2,000
7	40	Person	Food Arrangements- 40 nos	200	1	Person	8,000
						Rate of 1 Program	**40000**

Assistant Engineer PWD WRD,
Environmental Cell Section-IV,
Vridhachalam.

Asst.Exe. Engineer, PWD, WRD,
Environmental Cell Sub Division –I,
Taramani, Chennai-113.

Executive Engineer, PWD, WRD,
Environmental Cell Division,
Taramani, Chennai-113.

Name of work:
Implementation and Monitoring of Environmental and Social Management Framework for Manimukthanadhi Sub Bain of Vellar Basin in Kallakurichi District.

Estimate Amount Rs.7.00 Lakhs

ABSTRACT ESTIMATE

S.No	Qty	Description of Work	Rate in Rs.	Per	Amount in Rs.
I	**Environmental Social Monitoring of river basin including periodical water quality testing and documentation**				
1	**Collection and testing of Water Samples**				
i).	44 Nos	Testing Water Samples collected from tanks for a period of Two years (Rate including GST of 18%)	7316	Nos	321904
2	**Monitoring of Implementation of ESMP & GRM**				
i).	4 Months	Engaging Technical Assistant Grade II for assisting the Field officers for collecting the data, preparation of reports, documents and for other office work etc., (Rs.844+(10%)84=Rs.928) & (26days/month i.e. 928*26=Rs.24128 per month)	24128	Month	96512
ii).	3 Months	Hiring Jeep driver on service contract basis for the department vehicle of the sub division (Rs.592+(10%)59=Rs.651) & (26days/month i.e. 651*26=Rs.16926 per month)	16926	Month	50778
iii).	2500 Km	Hiring of Private Vehicle and Conveyance charges	16.00	Km	40000
iv).	LS	Labour charges for collecting the water samples including all and purchase of bottles and sampling accessories, Documentation of test results including labour charges	LS		10000
v).	LS	Propagation of Environmental Awareness through stickers, pamphlets.	LS		20000

vi).	LS	Documentation of the entire activities, Preparation of sub-basin maps of all size and preparation of inference reports/ completion reports and activities reports & Upgradation of computer and accessories.	LS		30000
II	**Conducting Capacity Building Training on Implementation of ESMP and GRM for the WRD Engineers, Contractors and WUA members – 30Nos + 10 Organisers**				
i).	2Nos	Conducting Capacity Building Training on Implementation of ESMP and GRM for WRD Engineers, contractors and WUA members and Conducting Safeguard Training to all Implementing Agencies	40000	1No	80000
III	LS	GST @12% for item 2 of I and item II mentioned above	LS		39275
IV	LS	Labour Welfare Fund 1%	LS		7000
V	LS	Petty Supervision & Unforeseen items etc., complete	LS		4531
			Total		**7,00,000**

(Rupees Seven Lakhs only)

Assistant Engineer PWD WRD,
Environmental Cell Section-IV,
Vridhachalam.

11/8/2020

Asst.Exe. Engineer, PWD, WRD,
Environmental Cell Sub Division –I,
Taramani, Chennai-113.

Executive Engineer, PWD, WRD,
Environmental Cell Division,
Taramani, Chennai-113.

11/8/2020

Annexure – II

WALK THROUGH SURVEY (WTS)

1. Walk Through Survey in Manimukthanadhi Sub Basin under Chennai Region conducted during the month of June and July 2020
2. No. of Villages covered : **34 Villages**
3. Category of Villagers participated :
   - i. No. of farmers participated : **732 Nos.**
   - ii. No. of Women Self Help Group Members participated : **Nil**
   - iii. No. of representatives from NGO's : **Nil**
   - iv. No. of Landless farmers : **Nil**
   - v. Panchayat Representatives Participation :
     - a) President - No
     - b) Secretary - No
     - c) Members - No
   - vi. Feed Back : WTS feedback is recorded in chapter 4.12 of Manimukthanadhi Sub Basin DPR

i. WRD Works:

Tanks(No's)	Anicuts (No's)	Supply Channel/Canal(Km)
34	10	40.15km

Agri. Related (Agriculture/Horticulture/TNAU/AED):

Soil Type	Existing Cropping Pattern	Major Crops	Major Issues	Farm Ponds	Others
Inceptisol, Alfisol, Vertisol	**Perennial Crops** Fodder Crops **Annual Crop** Sugarcane, Banana, Tapioca **Seasonal Crop** Paddy, Milets, Groundnet, Pulses	Paddy, Pulses,	1.Water Scarcity 2.Reduced Soil fertility 3.Necessity for increased use of pesticides 4.Disposal of farm waste 5.Labour Scarcity during harvesting times	To sustain water for crops by introducing farm ponds were requested by farmers and 10locations were identified for farm ponds	

ii. Livelihood related (Animal Husbandry/Fisheries):

Veterinary Services (Artificial Insemination, Deworming, Infertility, Disease Surveylence & Prevention, Fodder Development)	Fisheries Activity(Aquaculture in Farm Ponds and Irrigation Tanks)	Others
1. There is gap in demand to supply of fodder for farm animals. 2. Lack of knowledge in managing Cross breed animals. Hence diseases like mastitis, worm infestations are major issues for cattle owners. 3. Infertility of cattles. Many breedable population has not yet been covered under Artificial insemination. 4. Lack of animal identification system which constraints the disease control and planned breeding interventions.	Where ever the impounded water is available for four months and above aquaculture is proposed to be carried out for Long term and Short term in selected tanks and farm ponds.	

4. Special Features of the sub basin:

   i. Ecologically sensitive area present in this sub basin: Nil

   ii. Sensitive Crops :

      a) Water guzzling: Paddy/Chillies

      b) Less Water : Bhendi/Brinjal/ Watermelon/Chillies

      c) Others : Groundnet/Millets/Ragi/Maize

5. Gender Strategy:

   i. Percentage of Women expected to involve in

WRD Activities	:	To be decided during implementation
Agri. related Activities	:	To be decided during implementation
Livelihood related	:	To be decided during implementation

Environmental Interventions proposed based on Observations:

- For WRD works, the following Environmental interventions are proposed. Monitoring of ESMP, GRM, Monitoring of water quality for pre and post project period by collection and testing of water samples, Implementation of environmental Code of Practices and Creating Capacity Building programs

regarding environmental awareness to WRD Engineers, Contractors, WUA Members and stake holders and Safeguard Training to the line department field officials.

- It is proposed to collect water samples in tanks where fisheries activities are proposed to be carried out in order to assess the water quality.

CHECKLIST

1. Walk through survey form attached: **Yes**
2. Environmental and Social Management Plan(ESMP) and Screening Checklist for packages

No.of Packages/Tanks		
Total	Applicable	Not Applicable
Total no. of packages-1No	-	34Nos of Tanks and 10Nos of Anicuts

3. Summary of Walk- Through survey Included: **Yes**
4. Summary of Feed Back along with planned activities Included: **Yes**
5. Special features of the Sub Basin Included: **No**
6. Overview of Gender Strategy Included: **Yes**
7. Mechanism & Schedule for establishment of GRM Included: **Yes**
8. Plan of activities for Environmental Monitoring and Awareness Included: **Yes**

Submitted by

Assistant Engineer PWD WRD,
Environmental Cell Section-IV,
Vridhachalam.

Asst.Exe. Engineer, PWD, WRD,
Environmental Cell Sub Division –I,
Taramani, Chennai-113.

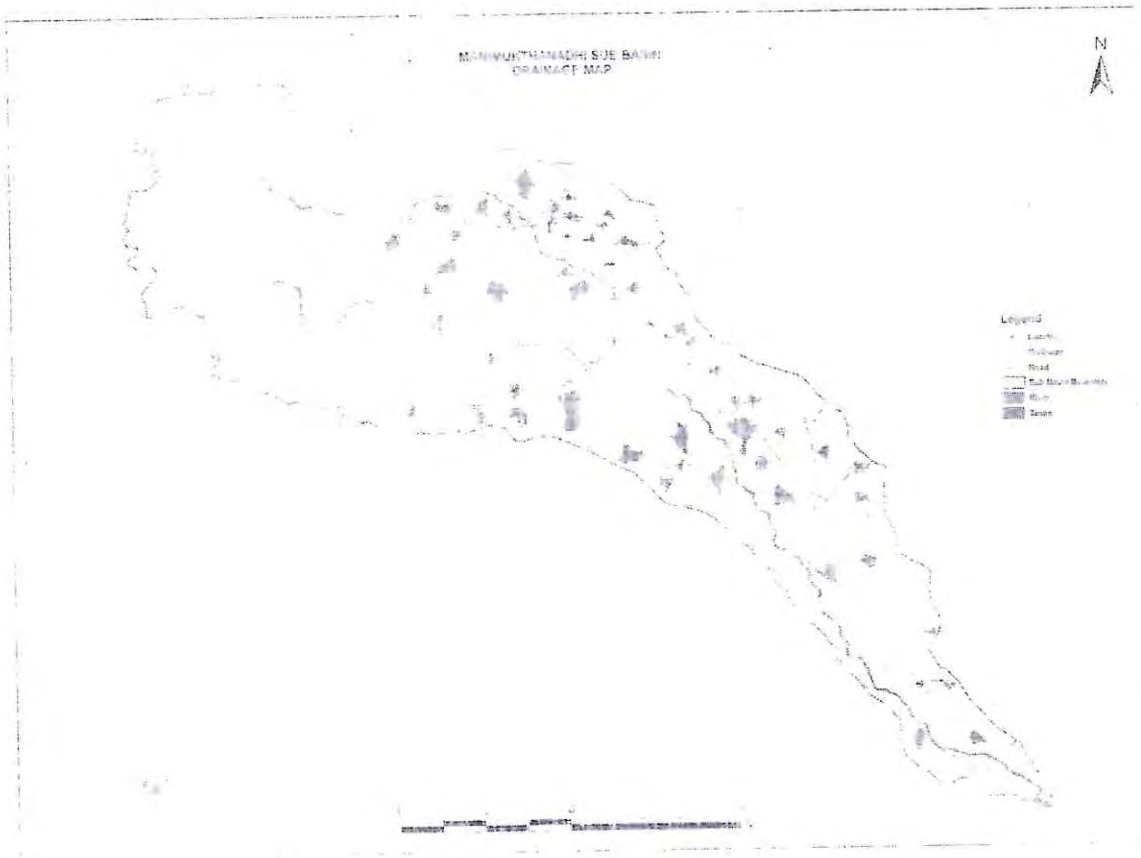
Approved by

Executive Engineer, PWD, WRD,
Environmental Cell Division,
Taramani, Chennai-113.

Reviewed by

Social Development Specialist, MDPU,
Chennai.

Environmental Specialist,
MDPU, Chennai.


N

8.GROUND WATER COMPONENT

PUBLIC WORKS DEPARTMENT
WATER RESOURCES ORGANISATION

TNIAMP PROJECT

PHASE – III

MANIMUKTHA SUB BASIN

NAME OF WORK: CONSTRUCTION OF ARTIFICIAL RECHARGE WELL STRUCTURES 3No's IN MANIMUKTHA SUBBASIN (TANKS– CHITTALUR, KUDIYANALLUR AND THYIYAGAI) of KALLAKURICHI DISTRICT UNDER GROUND WATER COMPONENT

Est. Amount Rs.: 145.80 Lakhs

GROUND WATER DIVISION
CUDDALORE

REPORT FOR THE CONSTRUCTION OF ARTIFICIAL RECHARGE WELL STRUCTURES 3No's IN MANIMUKTHA SUBBASIN (TANKS--CHITTALUR, KUDIYANALLUR AND THYIYAGAI) OF KALLAKURICHI DISTRICT UNDER GROUND WATER COMPONENT

Est. Amount Rs. : 145.80 Lakhs

Introduction :

The basin originates in Kalvarayan hills with drainage Area of 749.54 Km having I two drainages namely Mani river and Muktha river originating in the Northern part of the eastern slope of the Kalvarayan Hills in SankarapuramTaluk at an altitude of about40 km and the Muktha River flows for 32 km. These two rivers confluence ManimukthaNadhi sub basin having18 Anicuts , 49 PWD tanks, and one ManimukthaNadhi reservoir having the totalAyacut of 5027 Hectares. Average rainfall is 950mm in this sub basin.

Government of TamilNadu have sanctioned and implemented Rehabilitation of Water Resources such as Tanks and Anicuts in Manimuktha sub Basin with World Bank Assistance through IAMWARM Project. Accordingly to improve the Ground Water quality and quantity and to conjunctive use of water for irrigation recharge structure in Tank water spread area are proposed in Kallakurichi District.

Location :

1.CHITTALUR Tank:

The proposed construction of Artificial Recharge structure is in Chittalur tank of Chittalur village located in Kallakurichi Taluk of Kallakurichi District in Tamil Nadu. The Tank is located at Latitude of 11°42'01" and Longitude of 79°04'45". The ayacut under this tank is 155.79 ha. The total catchment area is 4.53 Sq.km. Capacity of Tank is 0.32 MCM. No. of fillings is 1. This Non-System tank which is functioning is maintained by PWD. This tank comes under Manimuktha Sub Basin of Vellar Basin. From the Observation of the tank surplus in the past five years, the tank has surplused in the year 2015

Chittalur Tank comes under the category of Over -Exploited in Thiyagadurugam Block of Kallakurichi Taluk in Kallakurichi District.

The Lithology of Chittalur Tank is as follows.

- G.L. to 2.00m is top soil (consists of silt, clay mixed with sand , gravel)
- 2.00m to 4.00m is Highly weathered rock
- 4.00m to 7.00m is Moderately weathered rock
- 7.00 to 10.00m is Moderately fractured rock
- 10.00 to 13.00m is Less fractured rock

2.KUDIYANALLUR tank:

The proposed construction of Artificial Recharge structure is in Kudiyanallur tank of Kudiyanallur village located in Kallakurichi Taluk of Kallakurichi District in Tamil Nadu. The Tank is located at Latitude of 11°40'07" and Longitude of 79°07'60". The ayacut under this tank is 55.71 ha. The total catchment area is 4.27 Sq.km. Capacity of Tank is 0.33 MCM. No. of fillings is 1. This Non-System tank which is functioning is maintained by PWD.This tank comes under Manimuktha Sub Basin of Vellar Basin. From the Observation of the tank surplus in the past five years, the tank has surplused in the year 2015

Kudiyanallur Tank comes under the category of Over -Exploited in Thiyagadurugam Block of Kallakurichi Taluk in Kallakurichi District.

The Lithology of Kudiyanallur Tank is as follows.

- G.L. to 1.00m is top soil (consists of silt, clay mixed with sand , gravel)
- 1.00m to 3.00m is highly weathered rock
- 3.00m to 5.00m is Moderately weathered rock
- 5.00 to 8.00m is Less weathered rock

- 8.00 to 10.00m is Highly fractured rock
- 10.00 to 14.00m is Less fractured rock

3.THYIYAGAI tank:

The proposed construction of Artificial Recharge structure is in Thyiyagai tank of Thyiyagai village located in Kallakurichi Taluk of Kallakurichi District in Tamil Nadu. The Tank is located at Latitude of 11°42'24" and Longitude of 79°06'00". The ayacut under this tank is 54.05 ha. The total catchment area is 22.21 Sq.km. Capacity of Tank is 0.18 MCM. No. of fillings is 1. This Non-System tank which is functioning is maintained by PWD.This tank comes under Manimuktha Sub Basin of Vellar Basin. From the Observation of the tank surplus in the past five years, the tank has surplused in the year 2015

Thyiyagai Tank comes under the category of Over -Exploited in Thiyagadurugam Block of Kallakurichi Taluk in Kallakurichi District.

The Lithology of Thyiyagai Tank is as follows.

- G.L. to 1.00m is top soil (consists of silt, clay mixed with sand , gravel)
- 1.00m to 2.00m is highly weathered rock
- 2.00m to 5.00m is Moderately weathered rock
- 5.00 to 7.00m is Less weathered rock
- 7.00 to 9.00m is Highly fractured rock
- 9.00 to 12.00m is Less fractured rock

Necessity of the Proposal :

As per the parameters of Lithology, the tanks are suitable locations to recharge the Ground Water by construction of Artificial Recharge Well Structures. This shows that the tanks have a good yield from its catchment. So in order to

conserve this surplus flow and to save it in the underground aquifer this proposal is putforth. Due to this the following advantages will be realized.

1. The recharge of ground water in the nearby irrigation wells of surrounding villages can be improved.
2. Due to conjunctive use of water through irrigation wells crop ayacut area will be increased.
3. The quantity and quality of ground water will also improve.
4. Also in severe drought seasons this recharge well structure can be used as a pumping well for the community purposes.

Details of the Proposed Recharge Well Structure (Hard rock areas):

As per the Chief Engineer (DRCS) approved sketch enclosed vide Lr. No: SE(D)/T-5/F-999/2016/Dated:08.12.2016, an open well of circular dimension of 8.00m diameter in size to a depth of 10.00m will be excavated with necessary berms and skin walls to retain the earth (to avoid erosion and damages by water storage at the FTL condition). In the inside portion of the skin wall, bed concrete in M10 is proposed to avoid erosion due to falling water.

Excess water during surplus flow period will be recharged through the recharge well structure by collection of water over FTL and recharge through the top permeable strata.. In outer circular wall the porous concrete plugs is provided at 1.00m interval in staggered manner to prevent the entry of debris. In addition to this, to improve the recharge in the hard rock strata through fissures and faults drilling of 150mm diameter naked boreholes in vertical direction at the bottom and horizontal direction at the sides of the well is proposed. Necessary filter media in Coarse aggregate using HBG stone jelly at bottom most layer and fine aggregates using river sand at top filter media is proposed in this recharge structure. The Chain fencing is provided to avoid any mishap and casualty either to human or animals.

Specification :

The following provisions are made in this estimate towards the construction of recharge well structure.

1. Earth work for open well excavation in HSC, hard red earth stiff black cotton soil, soft rocks or kankar, Medium rock requiring blasting and not

requiring blasting etc., at various depth from first depth of 2m to sixth depth upto 12m.

2. Reinforced cement concrete M25 with necessary designed reinforcements and curved centering for skin walls are proposed.

3. 150mm dia vertical and horizontal Bore holes with necessary PVC pipes to avoid siltation during flood time.

4. Filter media using 40mm size HBS in the bottom layer and sand in top layer are also proposed at the bottom of open well.

5. Mild Steel fabrication with weld mesh provision will be provided over the open well.

6. Necessary Lump Sum Provisions are made for GST at 12%, Provision for Petty Charges,Advertisement charges,Documentation charges,Photographic charges, Name board , Impact assessment studies, Contingent charges and Unforeseen items @ 2.5 % and Labour welfare Fund at 1%..

This estimate is priced to the schedule of rates for the year 2020-21 and total cost of the project works out to Rs.145.80Lakhs.

The above expenditure towards this project will be charged under the head of account of IAMWARM PROJECT.

31/12/20

Assistant Engineer,PWD.,
Ground water section
Neyveli

31/12/20

Assistant Executive Engineer,PWD,(I/C)
Ground Water SubDivision,
Neyveli

31/12/20

Executive Engineer,PWD.,
Ground Water Division,
Cuddalore

Construction of 3 Nos of Artificial Recharge Well Structures in Manimuktha Sub Basin of Kallakurichi District

WRO COST TABLE

Name of Sub Basin : **MANIMUKTHA**

Sl.No	Description of Work	Quantity	Amount in Rupees	Remarks
I	Tank Component			
	NIL			
II	Non Tank Component			
	NIL			
III	Ground Water Component			
1	Chittalur	1 No	4177483	
2	KUDIYANALLUR	1 No	4218661	
3	Thyiyagai	1 No	4205986	
	Sub Total		**12602130**	
IV	GST at 12%		1512256	
V	Provision for Petty Supervision Charges, Advertisement charges, Documentation charges, Photographic charges, Name board, Impact assessment studies, Contingent charges and Unforeseen items @ 2.5 %		320314	
VI	Provision for Labour Welfare Fund @ 1 %		145300	
TOTAL			**14580000**	

Asssitant Engineer,PWD,WRD.,
Ground Water Section,
Neyveli.

Asssitant Executive Engineer,PWD,WRD(I/c)
Ground Water Sub Division,
Neyveli

Executive Engineer,P.W.D
Ground Water Division,
Cuddalore.

CONSTRUCTION OF ARTIFICIAL RECHARGE WELL STRUCTURES 3No's IN MANIMUKTHA SUBBASIN (TANKS–CHITTALUR, KUDIYANALLUR AND THYIYAGAI) OF KALLAKURICHI DISTRICT UNDER GROUND WATER COMPONENT

Lead Statement Chittalur

Sl No.	Description of material	Unit	Source of supply	Lead in Kmmr.	Cost of Material	Lead Charges	Total cost at site
1	Cement	Mt.	Thiyagadurugam	8	5800.00	52.08	5852.08
2	Steel	Mt.	Thiyagadurugam	8	45000.00	52.08	45052.08
3	Sand for mortar	m^3	Arasur	54	447.00	447.06	894.06
4	Sand for filling	m^3	Arasur	54	447.00	447.06	894.06
5	Hard broken stone jelly 40 mm	m^3	Elavanasurkottai	20	1004.00	193.00	1197.00
6	Hard broken stone jelly 20 mm	m^3	Elavanasurkottai	20	1398.00	193.00	1591.00
7	Rough stone for masonry	m^3	Elavanasurkottai	20	437.00	193.00	630.00
8	Rough stone for revetment	m^3	Elavanasurkottai	20	378.00	193.00	571.00
9	Bond stone	m^3	Elavanasurkottai	20	630.00	193.00	823.00
11	Cut stone fully dressed	m^3	Supplied at site	--	6256.00		6256.00
12	Country wood planks (upto 30cm wide -25mm thick)	m^3	,,	--	39400.00		39400.00
13	Country wood scantling (up to 4m length)	m^3	,,	--	34300.00		34300.00

Certified that the lead Partculars Given above are correct and nearest to the best of my knowledge.
Certified that the rates adopted are as per the current schedule of rates for the year 2020-21

31/8/2020
Assistant Engineer, P.W.D
Ground water section
Neyveli.

31/7/2020
Assistant Executive Engineer, P.W.D (I/c)
Ground Water Sub Division
Neyveli

CONSTRUCTION OF ARTIFICIAL RECHARGE WELL STRUCTURES 3No's IN MANIMUKTHA SUBBASIN (TANKS–CHITTALUR, KUDIYANALLUR AND THYIYAGAI) OF KALLAKURICHI DISTRICT UNDER GROUND WATER COMPONENT

DATA

Sl. No.	Qty.	Unit	Description	Rate in rupees	Per	Amount in rupees
			SUB DATA			
1			CEMENT MORTAR 1:2			
	720.00	KG	CEMENT	5852.08	MT	4213.50
	1.00	cu.m.	SAND FOR MORTAR	894.06	cu.m.	894.06
	1.00	cu.m.	MIXING CHARGES (Machine Mixing)	115.00	cu.m.	115.00
			Rate for 1 cu.m.			**5222.56**
2			CEMENT MORTAR 1:3			
	480.00	KG	CEMENT	5852.08	MT	2809.00
	1.00	cu.m.	SAND FOR MORTAR	894.06	cu.m.	894.06
	1.00	cu.m.	MIXING CHARGES (Machine Mixing)	115.00	cu.m.	115.00
			Rate for 1 cu.m.			**3818.06**
3			CEMENT MORTAR 1:4			
	360.00	KG	CEMENT	5852.08	MT	2106.75
	1.00	cu.m.	SAND FOR MORTAR	894.06	cu.m.	894.06
	1.00	cu.m.	MIXING CHARGES (Machine Mixing)	115.00	cu.m.	115.00
			Rate for 1 cu.m.			**3115.81**
4			CEMENT MORTAR 1:5			
	288.00	KG	CEMENT	5852.08	MT	1685.40
	1.00	cu.m.	SAND FOR MORTAR	894.06	cu.m.	894.06
	1.00	cu.m.	MIXING CHARGES (Machine Mixing)	115.00	cu.m.	115.00
			Rate for 1 cu.m.			**2694.46**
5			CEMENT MORTAR 1:6			
	240.00	KG	CEMENT	5852.08	MT	1404.50
	1.00	cu.m.	SAND FOR MORTAR	894.06	cu.m.	894.06
	1.00	cu.m.	MIXING CHARGES (Machine Mixing)	115.00	cu.m.	115.00
			Rate for 1 cu.m.			**2413.56**
6			Labour wrought and put up for 1 cu.m.			
	4.50	Nos.	Carpenter I Class	752.00	Each	3384.00
	13.20	Nos.	Carpenter II Class	718.00	Each	9477.60
	8.80	Nos.	Mazdoor I Class	502.00	Each	4417.60
			Sundries for nails, screws, etc.			172.79
			Total			17452.00
			Rate for 1 cu.m.			**17452.00**
7			Priming coat for new iron work - 10 sq.m.			
	1.33	lit.	Red oxide primer	134.30	lit.	178.62
	0.70	Nos.	Painter I Class	615.00	Nos.	430.50
			Sundries for brushes etc.,		LS	2.65
			Rate for 1 sq.m.			**61.00**
			MAIN DATA			
	1.00	m^3	Clearing the scrub jungle	4.10	m^3	4.10

Sl. No.	Qty.	Unit	Description	Rate in rupees	Per	Amount in rupees
8			Earth work open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in Hard stiff clay, stiff black coton soil, hard red earth, shales, murram, gravel, stoney earth and earth mixed with small size boulders and hard gravely soil - First depth of 2 metre			
	1.00	m^3	**As per Schedule of Rate upto 2m**	83.80	m^3	83.80
9			Earth work open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in soft disintegrated rock, laterite, soft rock or kankar not requiring blasting - First depth of 2 metre			
	1.00	m^3	**As per Schedule of Rate Upto 2m.**	129.10	m^3	129.10
			Upto 2-4m.	258.20		258.20
			Upto 4-6m.	387.30		387.30
			Upto 6-8m.	516.40		516.40
			Upto 8-10m.	645.50		645.50
9			Open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in Medium rock and dense medium rock requring blasting - First depth of 2 metre			
	1.00	m^3	**As per Schedule of Rate Upto 2m.**	311.60	m^3	311.60
			Second Depth above 3-4m	623.20		623.20
			Third Depth above 4-6m	934.80		934.80
			Fourth Depth above 6-8m	1246.40		1246.40
			Fifth Depth above 8-10m	1558.00		1558.00
10			Open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in Medium rock and dense medium rock requiring blasting - First depth of 2 metre			
	1.00	m^3	**As per Schedule of Rate Upto 2m.**	311.60	m^3	311.60
			Fifth Depth above 8-10m	1558.00		1558.00
			Depth above 10-12m	1869.60		1869.60
			Depth above 12-14m	2492.80		2492.80
			Depth above 14-16m	3116.00		3116.00
			Depth above 16-18m	3739.20		3739.20
			Depth above 18-20m	4362.40		4362.40
11			Open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in Hard granite measured in solid including blasting and stacking - First depth of 2 metre			
	1.00	m^3	**As per Schedule of Rate Upto 2m.**	609.50	m^3	609.50
			Sixth Depth above 10-12m	3657.00		3657.00
12			Plain Cement Concrete M10 using graded metal 40 : 60 of 20mm and 40 mm gauge hard broken granite stone jelly for all concrete items of works complete complying with standard specification and as directed by the departmental officers- Foundation and basement			
	3.60	cu.m.	Broken stone jelly 20mm	1591.00	cu.m.	5727.60
	5.40	cu.m.	Broken stone jelly 40mm	1197.00	cu.m.	6463.80
	4.50	cu.m.	Cement mortar 1:3	3818.06	cu.m.	17181.26
	1.80	Nos.	Mason II Class	718.00	Each	1292.40
	17.70	Nos.	Mazdoor I Class	502.00	Each	8885.40
	14.10	Nos.	Mazdoor II Class	412.00	Each	5809.20
	10.00	cu.m.	mixing charges	115.00	cu.m.	1150.00
			Total for 10 cu.m.			46509.66
			Rate for 1 cu.m.			**4650.97**

Sl. No.	Qty.	Unit	Description	Rate in rupees	Per	Amount in rupees
13			Centering For plane surfaces such as RCC floor slab, roof slab, beams, lintels, bed blocks, landing slab, waist slab, portico slabs and beams. etc.			
			Sub Data: 1			
			Cost of MS sheets and angles for each set:			
			Weight of MS sheets 10 gauge of size 90cm x 60cm x 3.175mm			
			3.175 x 7850 / 1000 x 0.54 =	13.46	Kg	
			Weight of MS angles of size 25cm x 25mm x 3mm:			
			3.6 x 1.1 kg / m =	4.00	Kg	
	13.46	Kg	Cost of MS sheets	41.20	Kg	554.55
	4.00	Kg	Cost of MS angles	41.20	Kg	164.80
						719.35
	LS		Add for cutting, bending, welding charges etc.		LS	70.65
			Total for one set (A)			**790.00**
			Sub Data: 2			
			Cost of MS sheets and angles and silver oak joists and casurina props for 1 sq.m.			
	19.00	Set	Cost of MS sheets and MS angles (as per A) (Adopting 40 uses)	790.00	Each	15010.04
			Total for 40 uses			15010.04
			Total for 1 use / 10 sq.m. (B)			**375.25**
	0.12	cu.m.	Cost of silver oak joists of size 10cm x 6.5cm	15500.00	cu.m.	1860.00
	98.50	RM	Cost of casurina props 10 to 13cm dia.	25.20	RM	2482.20
			Total for 5 uses			**4342.20**
			(Adopting 5 uses for silver oak / country wood joists and casurina props			4342.20
			Total for 1 use / 10 sq.m. (C)			**868.44**
			Main Data for centering for 10 sq.m.			
	10.00	sq.m.	Cost of MS sheets and angles (B)	375.25	10 Sq m	375.25
	10.00	sq.m.	Cost of silver oak joists and casurina props (C)	868.44	10 Sq m	868.44
		LS	Add for silver planks		LS	40.00
	3.80	Nos.	Carpenter I Class	752.00	Each	2857.60
	5.40	Nos.	Mazdoor I Class	502.00	Each	2710.80
	1.00	No	Fitter II Class	660.00	Each	660.00
		LS	Add for wedges, coils, nails, etc.,		LS	50.00
		LS	For periodical cleaning and painting of MS sheets & angles (5% of cost of sheet & angle)		LS	87.91
			Total for 10 sq.m.			7650.00
						765.00
			Deduct rate for strutting plain surface		**88.70**	**88.70**
			(or) say, Rate for 1 sq.m. (a)			**676.30**

Sl. No.	Qty.	Unit	Description	Rate in rupees	Per	Amount in rupees
			Sub-Data for strutting for 10 Sq.m			
	98.50		Casurina props 10 to 13 cm dia.	25.20		2482.20
			Assuming 5 uses, Rate for 1 use			496.44
	0.3		Carpenter I Class	752.00		225.60
	0.3		Mazdoor I class	502.00		150.60
	LS		Add for Wedges and nails	10.00		14.36
			Total			**887.00**
			Rate for 1 Sq.m	**88.70**		
15			Supplying erection and CENTERING for sides and soffits of plain surfaces such as slab etc., using M.S. Sheets of size 90cmx60cmxBG 10 guage stiffended etc., complete complying with standard specification - **Circular centering.**			
	1.00	sq.m.	Centering for slabs beams etc., as per (a)	676.30	sq.m.	676.30
			Add 50% extra			338.15
			Total for 1 sq.m.			**1014.45**
16			Reinforced Cement Concrete M25 using 20 mm gauge hard broken granite stone jelly for all RCC items of works excluding cost of reinforcement grill and fabricating charges, centering and shuttering but including laying, vibrating with mechanical vibrators, finishing, curing, etc. and providing fixtures like fan clamps in the RCC floor / roof slabs wherever necessary and bearing surfaces of walls, beams etc. nd) and kraft paper laid over it without claiming extra, etc., complete complying with standard specification and as directed by the departmental officers- Foundation and basement.			
	9.00	cu.m.	20mm Machine Crushed Stone Jelly	1591.00	cu.m.	14319.00
	4.50	cu.m.	Sand	894.06	cu.m.	4023.27
	4033.00	kg	Cement	5852.08	MT	23601.44
	3.50	Nos.	Mason II Class	718.00	Each	2513.00
	21.20	Nos.	Mazdoor I Class	502.00	Each	10642.40
	35.30	Nos.	Mazdoor II Class	412.00	Each	14543.60
	4.50	cu.m.	Mixing Charges	115.00	cu.m.	517.50
	10.00	cu.m.	Vibration Charges	70.70	cu.m.	707.00
			Total for 10 cu.m.			70867.20
						7086.72
			Rate for 1 cu.m.			**7086.72**
			Rate for 1 cu.m.:			
a			0m upto 1.5m below ground level			**7086.72**
b			For Above Ground level up to 4.5m Ht	7086.72	89.90	**7176.62**
c			For 1.50m to 4.50m depth below ground level	7086.72	88.50	**7175.22**

Sl. No.	Qty.	Unit	Description	Rate in rupees	Per	Amount in rupees
17			No Fine Cement Concrete CC 1:4 using 20 mm gauge hard broken granite stone jelly for all Concrete items complete complying with standard specification and as directed by the departmental officers-Foundation and basement.			
	1620.00	kg	Cement	5852.08	MT	9480.37
	9.00	cu.m.	Broken stone 20mm.	1591.00	cu.m.	14319.00
	1.80	Nos.	Mason II Class	718.00	Each	1292.40
	17.70	Nos.	Mazdoor I Class	502.00	Each	8885.40
	14.10	Nos.	Mazdoor II Class	412.00	Each	5809.20
			Total for 10 cu.m.			39786.37
						3978.64
			Mixing Charges			115.00
			Rate for 1 cum.			**4094.00**
18			Supplying, fabricating and placing in position Mild Steel / Ribbed Tor Steel grills for all RCC works as per design given including cost of steel and G.I. binding wire in all floors etc. complete complying with standard specification. (Contractor has to make his own arrangements for the supply of steel and binding wire)			
			MS (or) RTS rods			
	1.00	Qtl	Cost of steel	45052.08	MT	4505.21
	0.01	Qtl	Binding wire	43.75	Kg	43.75
	3.50	Nos.	Fitter I Class	679.00	Each	2376.50
			Rate for 1 Quintal			**6925.00**
19			Drilling of 150 mm (6" dia) Vertical bore wells in hard rock areas to the required depth as directed by the departmental officers including labour charges for inserting casing pipes assembly in the drilled holes, if necessary grouting the casing pipe etc., including transportation charges for the rigs and supporting vehicles from one place to another place (the casing pipe has to be supplied by the contractor at the rates noted in a separate item) Rate as per TWAD BOARD SOR 2019-20 page 265 Sl.No.11a			
	1.00	Rm	Rate Rs:	783.18	/Rm	783.18
20			Drilling of 150 mm (6" dia) Horizontal bore wells in hard rock areas to the required depth as directed by the departmental officers including labour charges for inserting casing pipes assembly in the drilled holes, if necessary grouting the casing pipe etc., including transportation charges for the rigs and supporting vehicles from one place to another place (the casing pipe has to be supplied by the contractor at the rates noted in a separate item) Rate as per TWAD BOARD SOR 2019-20 page 265 Sl.No.11b			
	1.00	Rm	Rate Rs:	827.78	/Rm	827.78
21			Supplying and erection of PVC Special Blue slotted pipes for Borewells of size 140 mm dia with standard specifications.			
	1.00	Rm	As per Schedule of Rate 2020-21 Item	**406.00**		
			Rate Rs:	406.00	/Rm	406.00
22			Supplying and fixing of end cap with screws suitable to 150 mm dia PVC pipes as per standard specifications.			
	1.00	No.	As per SOR 2020-21 item No. 369(C)(c)			
			Rate Rs:	111.00	/No.	111.00
23			Supplying and Filling of 40mm HBS jelly including cost and conveyance of meterials to site of work with standard specifications.			

Sl. No.	Qty.	Unit	Description	Rate in rupees	Per	Amount in rupees
	1.00	cu.m	40mm jelly	1197.00		1197.00
			filling charges (item no.85)	29.30		29.30
			Rate for 1 cu. M			**1226.30**
24			Supplying and fixing of chain link fencing of size 5 x 5 cm using iron wire of all size with standard specification			
	1.00	m^2	As per sheduled of rate pg.44(.item no.104)	157.20	m^2	157.20
			fixing charges	27.80		27.80
			Rate for 1 Sq. M			**185.00**
25			Supplying and Filling of river sand including cost and conveyance of meterials to site of work with standard specifications.			
	1.00	cu.m.	Cost of sand for filling	894.06	cu.m.	894.06
			filling charges	29.30		29.30
			Rate for 1 cu.m.			**923.36**
26			Supplying Mild steel grill works for windows ventilators, gates, etc., including priming coat as per standard specifications.			
	1.00	Kg	As per Schedule of Rates item 131	54.50	Kg	54.50
			Fixing Charges	17.50		17.50
			Rate for 1Kg			**72.00**
27			Supplying and erecting of weldmesh 10x10 cm 10 gauge as per standard specification.			
	1.00	Kg	As per Schedule of Rates item 126(iii)	143.00	Kg	143.00
			Fixing Charges	27.00		27.00
			Rate for 1Kg			**170.00**
28			Painting Ironwork (or) cement work in 2 coats with enamal paint including cost of paint etc.,Complete complying with standard specification.			
	2.22	Litre	Ready mixed enamel paint	223.20	Litre	495.50
	1.10	Nos.	Painter I Class	615.00	Each	676.50
		l.s	Sundries for brushes, soap, putty, etc.			8.00
			Total for 10 sq.m.			1180.00
			Rate for 1 sq.m.			**118.00**
29			Conveyance of excavated earth and blastered materials from initial lead to outside the tank with a lead of 2km including all cost as directed by the departmental officers.			
	1.00	m^3	Loading cost (38.00+38.00)	76.00	m^3	76.00
	1.00	m^3	Lead charges 2 Km	20.80	m^3	20.80
			Rate for 1 sq.m.			**96.80**
30			Supplying and fixing of MS Angles for Truss work as per standard specifications.			
	1.00	Kg	As per Schedule of Rates item 112	41.20	Kg	41.20
			Fixing Charges Sl No 167	41.60	Kg	41.60
			Rate for 1Kg			**82.80**
31			Hire charges for Diesel pump sets 3HP TO 7.50 HP for bailing out water for foundations including the cost of fuel crew and transportation charges etc., complete complying with standard specification and as directed by the Departmental Officers.			
						333.89
			Rate for per hour = Rs		333.89	

31/12/21

Assistant Engineer, P.W.D
Ground water section
Neyveli.

Executive Engineer, PWD
Ground Water Division
Cuddalore 607 001

31/12/21

Assistant Executive Engineer, P.W.D (I/c)
Ground Water Sub Division
Neyveli

Chittalur Tank - Rate of RCC including Centering

S.No.	Description	Qty	Rate	Per	Amount
1	**Above GL**				
	Quantity of RCC(As per Detailed)	48	7176.62	m^3	344478
	Circular Centering				
	Inner Wall both sides	233.62	1014.45	m^2	236996
	Plain centering				
	Fencing post	19.44			
	Steps	5.4			
	Steps Alround	6.3			
		31.14	676.30	m^2	21060
				Total Amt.	**602534**
	Rate of concrete including Centering	**602534 / 48**	**12552.79**	**m^3**	
2	**0 m to 1.5 m Below GL**				
	Quantity of RCC(As per Detailed)	25	7086.72	m^3	177168
	Circular Centering				
	Inner Wall both sides (1x2x3.14x12.4x1.5)	116.8	1014.45	m^2	118488
	Plain centering	-	-	-	-
				Total Amt.	**295656**
	Rate of concrete including Centering	**295656 / 25**	**11826.24**	**m^3**	
3	**1.5 m to 4.5 m Below GL**				
	Quantity of RCC(As per Detailed)	77	7175.22	m^3	552492
	Circular Centering				
	Inner Wall both sides (1x2x3.14x12.4x1)	77.87			
	Inner Wall Footing	38.94			
	Well beam	52.12			
		168.93	1014.45	m^2	171371
	Plain centering				
	Retaining Wall Base	3.2			
	Retaining Wall	28.8			
		32	676.30	m^2	21642
					745505
	Rate of concrete including Centering	**745505 / 77**	**9681.88**	**m^3**	
4	**No fine Concrete**				
	Quantity of Concrete (As per Detailed)	2	4094.00	m^3	8188
	Circular Centering				
	Plain centering				
	No fine Concrete	8.64	676.30	m^2	5843
					14031
	Rate of concrete including Centering	**14031 / 2**	**7015.5**	**m^3**	

31/5/12

Assistant Engineer,P.W.D.,
Ground Water Section
Neyveli

31/5/12

Assistant Executive Engineer,P.W.D.,(I/c)
Ground Water Sub Division
Neyveli

31/5/12

Executive Engineer, PWD
Ground Water Division
Cuddalore 607 001

CONSTRUCTION OF ARTIFICIAL RECHARGE WELL STRUCTURES 3No's IN MANIMUKTHA SUBBASIN (TANKS–CHITTALUR, KUDIYANALLUR AND THYIYAGAI) OF KALLAKURICHI DISTRICT UNDER GROUND WATER COMPONENT										
DETAILED ESTIMATE FOR CHITTALUR										
SL. No	**DESCRIPTION OF ITEMS**	**NO**				**L**	**B**	**D**	**QTY**	
1	Clearing Scrub jungle	1	x	1		50.00	50.00		2500.00	
2	Earth work open well excavation complying with relevant clauses and with lead upto 10 meter in Hard stiff clay, stiff black cotton soil, hard red earth, shales, murram, gravel, stoney earth and earth mixed with small size boulders and hard gravely soil first depth of 2 meters.									
	RCC wall for well	1	x	1	3.14/4	14.20	14.20	2.00	316.57	
	Add extra								0.43	
	Total								**317.00** M^3	
3	Earth work open well excavation complying with relevant clauses and with lead upto 10 meters in soft disintegrated rock, laterite, soft rock or kankar not requiring blasting - Second depth 2.0 to 4.0m									
	RCC wall for well	1	x	1	3.14/4	14.20	14.20	1.00	158.29	
	RCC wall foundation	1	x	1	3.14	12.40	2.00	0.60	46.72	
	Open well	1	x	1	3.14/4	8.00	8.00	1.00	50.24	
	Add extra								0.75	
	Total								**256.00** M^3	
4	Earth work open well excavation complying with relevant clauses and with lead upto 10 m in medium rock and dense medium rock requiring blasting.									
	Open well (4.00m-6.00m)	1	x	1	3.14/4	8.00	8.00	2.00	100.48 M^3	
	Add extra								0.52	
									101.00 M^3	
	Open well (6.00m-	1	x	1	3.14/4	8.00	8.00	2.00	100.48 M^3	
	Add extra								0.52	
									101.00 M^3	
	Open well (8.00m-10.00m)	1	x	1	3.14/4	8.00	8.00	2.00	100.48 M^3	
	Add extra								0.52	
									101.00 M^3	
	Open well (10.00m-12.00m)	1	x	1	3.14/4	8.00	8.00	2.00	100.48 M^3	
	Add extra								0.52	
									101.00 M^3	

5	Plain Cement Concrete M10 using graded metal 40 : 60 of 20mm and 40 mm gauge hard broken granite stone jelly for all concrete items of works complete complying with standard specification and as directed by the departmental officers- Foundation and basement.								
	RCC Wall Foundation	1	x	1	3.14	12.40	2.00	0.10	7.79
	Berm	1	x	1	3.14	10.30	1.70	(0.35+0.20) /2	15.12
	Ret . Wall	1	x	1		4.00	2.00	0.15	1.20
	Add Extra								0.89
	Total								**25.00** M^2
6	Supplying erection and CENTERING for sides and soffits of plain surfaces such as slab etc., using M.S. Sheets of size 90cmx60cmxBG 10 guage stiffended etc., complete complying with standard specification - Circular centering.								
	Below Ground Level								
	RCC wall footing	1	x	2	3.14	12.40		0.50	38.94
	RCC wall both sides	1	x	2	3.14	12.40		2.50	194.68
	Grade beam	1	x	2	3.14	8.30		1.00	52.12
	Add extra								4.26
	Total								**290.00** M^2
	Above Ground Level								
	RCC wall both sides	1	x	2	3.14	12.40		3.00	233.62
	Add extra								6.38
	Total								**240.00** M^2
7	Supplying erection and CENTERING for sides and soffits of plain surfaces such as slab etc., using M.S. Sheets of size 90cmx60cmxBG 10 guage stiffended etc., complete complying with standard specification -Foundation and basement centering.								
	Fencing Post	1	x	4	27	1.20	-	0.15	19.44
	No fine concrete	1	x	1	4	1.80	-	1.20	8.64
	steps	1	x	1	20	0.90	0.30	-	5.40
	Steps sides alround	1	x	1	20	2.10		0.15	6.30
	Ret Wall base	1	x	2		4.00	0.40	-	3.20
	Ret Wall	1	x	2		4.00	-	3.60	28.80
	Add Extra								0.22
	Total								**72.00** M^2

8	Reinforced Cement Concrete M25 using 20 mm gauge hard broken granite stone jelly for all RCC items of works excluding cost of reinforcement grill and fabricating charges, centering and shuttering but including laying, vibrating with mechanical vibrators, finishing, curing, etc. and providing fixtures like fan clamps in the RCC floor / roof slabs wherever necessary and bearing surfaces of walls, beams etc. and kraft paper laid over it without claiming extra, etc., complete complying with standard specification and as directed by the departmental officers- Foundation and basement.								
(a)	**Above GL**								
	Fencing Post	1	x	1	27	0.15	0.15	1.20	0.73
	RCC wall	1	x	1	3.14	12.40	0.40	3.00	46.72
	Deduction for porous concrete	1	x	54	3.14/4	0.15	0.15	0.40	-0.38
	steps	1	x	14		0.90	0.30	0.15	0.57
	Add Extra								0.36
	Total								**48.00** M^3
(b)	**0m to 1.5m below GL**								
	RCC wall	1	x	1	3.14	12.40	0.40	1.50	23.36
	steps	1	x	3		0.90	0.30	0.15	0.12
	Add Extra								1.52
	Total								**25.00** M^3
(c)	**1.5m to 4.5m below GL**								
	RCC wall base	1	x	1	3.14	12.40	1.80	0.20	14.02
	RCC wall base slope	1	x	1	3.14	12.40	(1.80+0.60)/2	0.30	14.02
	RCC wall base pedestal	1	x	1	3.14	12.40	0.60	0.50	11.68
	RCC Vertical wall	1	x	1	3.14	12.40	0.40	1.00	15.57
	steps	1	x	3		0.90	0.30	0.15	0.12
	Grade beam	1	x	1	3.14	8.30	0.30	1.00	7.81
	Ret.wall base	1	x	1		4.00	2.00	0.40	3.20
	Ret.wall	1	x	1		4.00	(0.6+0.45)/2	3.60	7.56
	Add Extra								3.02
	Total								**77.00** M^3
9	No Fine Cement Concrete CC 1:4 using 20 mm gauge hard broken granite stone jelly for all concrete items of works. complete complying with standard specification and as directed by the departmental officers- Foundation and basement.								
	For Vertical bore hole	1	x	4		0.45	0.45	1.20	0.97
	RCC wall no fine concrete	1	x	54	3.14/4	0.15	0.15	0.40	0.38
	Add Extra								0.65
	Total								**2.00** M^3

10	Supplying, fabricating and placing in position Mild Steel / Ribbed Tor Steel grills for all RCC works as per design given including cost of steel and G.I. binding wire in all floors etc. complete complying with standard specification. (Contractor has to make his own arrangements for the supply of steel and binding wire)								
	Quantity for Grade beam and Pedestal	1	x		1	51.05	70.00	-	3573.50
	Quantity for Vertical wall	1	x		1	93.95	75.00	-	7046.25
	Add extra for overlaps, joints etc.,								180.25
									10800.00 Kg
	Total								**108.00** Qtl
11	Drilling of 150 mm bore wells in hard rock areas to the required depth as directed by the departmental officers including labour charges for inserting casing pipes assembly in the drilled holes, if necessary grouting the casing pipe etc., including transportation charges for the rigs and supporting vehicles from one place to another place (the casing pipe has to be supplied by the contractor at the rates noted in a separate item) Rate as per TWAD BOARD SOR								
	Inside Open well(Vertical)	1	x		4	-	-	25.00	**100.00** RM
	Inside Open well(Horizontal)	1	x		4	-	-	30.00	**120.00** RM
12	Supplying and erection of PVC Special Blue slotted pipes for Borewells of size 140 mm dia with standard specifications.								
	For Vertical & horizontal Bore	1	x		8	-	-	2.00	**16.00** RM
	RCC wall no fine concrete	1	x	54				0.40	**21.60 RM**
								Total	**37.60 RM**
13	Supplying and Fixing of PVC End cap of size 150 mm dia,6 Kg best approved quality with ISI mark complete complying with standard specifications.								
	For Vertical Bore	1	x		4	-	-		**4.00** No's
14	Supplying and Filling of 40mm HBS jelly including cost and conveyance of materials to site of work with standard specifications.								
	Inside Open well	1			3.14/4	8.00	8.00	0.50	25.12
	Deduction for vertical borehole								-0.97
	Add Extra								0.85
									25.00 M^3

15	Supplying and Filling of river sand including cost and conveyance of materials to site of work with standard specifications.									
	Inside Open well	1	x		3.14/4	8.00	8.00	0.50		25.12
	Deduction for vertical borehole									-0.97
	Add Extra									0.85
										25.00 M^3
16	Supplying and fixing of chain link fencing									
	For open well	1	x	1	3.14	12.40	-	0.90		**35.04** M^2
	Deduction for Gate	1	x	1		0.90	-	1.20		**1.08** M^2
	Add Extra									0.04
										34.00 M^2
17	Supplying and Fixing MS Grill Gate									
	For Provision Gate	1	x	1		0.90	-	1.20		**1.08** M^2
	For $1m^2$ for 30Kg									**32.00** Kg
18	Conveyance of excavated earth and blasted materials from initial lead to outside the tank with a lead of 2km including all cost as directed by the departmental officers.									
	Quantity vide items 2,3,4									977.00 M^3
	Add Extra									3.00
	Total									**980.00**
19	Dewatering with diesel engine and pump during excavation of soils and during construction of artificial recharge structures Cost VIDE TWAD BOARD schedule of rates									
		1	x	1			100.00	10 Hrs/day		**1000.00** Hrs
	Total									**1000.00**
20	Supplying Mild steel grill works for , including priming coat as per standard specifications.									
	Open Well Covering	1	x	1	$\frac{3.14}{4}$	8.60	-	8.60		58.06
	Add Extra									1.94
										60.00
	At the rate of 25 Kg per M^2	1	x	1	1	60.00	25.00			**1500.00** Kg
21	Supplying and fixing of MS Angle for Truss work									
	Truss and Purlis (As per Calculation Sheet)									**1960.00** Kg
	Add Extra									**0.00** Kg
										1960.00 Kg

22	Supplying and erecting of Weld mesh 10 x 10 cm 10 gauge as per standard Specifications.								
	For Open Well	1	x	1	3.14/4	8.60	-	8.60	58.06
	Add Extra								1.94
									60.00
23	Painting Ironwork (or) cement work in 2 coats with enamal paint including cost of paint etc.,Complete complying with standard specification.								
	Grill & Weld Mesh	1	x	3	3.14/4	8.60	-	8.60	174.18
	Add Extra								5.82
									180.00

31/12/22

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Ground water section
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Assistant Executive Engineer, P.W.D (I/C)
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CONSTRUCTION OF ARTIFICIAL RECHARGE WELL STRUCTURES 3No's IN MANIMUKTHA SUBBASIN (TANKS–CHITTALUR, KUDIYANALLUR AND THYIYAGAI) OF KALLAKURICHI DISTRICT UNDER GROUND WATER COMPONENT CHITTALUR TANK

ABSTRACT ESTIMATE

Sl. No.	Qty	Unit	Description	Rate	Per	Amount
1	2500.00	M2	Clearing Scrub jungle	4.10	M2	10250
2			Earth work open well excavation complying with relevant clauses and with lead upto 10 meter in Hard stiff clay, stiff black cotton soil, hard red earth, shales, murram, gravel, stoney earth and earth mixed with small size boulders and hard gravely soil first depth of 2 meters			
	317.0	M³	First Depth of 0-2 m	83.80	M³	26565
3			Earth work open well excavation complying with relevant clauses and with lead upto 10 meters in soft disintegrated rock, laterite, soft rock or kankar not requiring blasting - Second depth			
	256.0	M³	Second Depth 2.00 to 4.00m	258.20	M³	66099
4			Earth work open well excavation complying with relevant clauses and with lead upto 10 m in medium rock and dense medium rock requiring blasting.			
	101.00	M³	Third Depth 4.00 to 6.00 m	934.80	M³	94415
	101.00	M³	Fourth Depth 6.00 to 8.00 m	1246.40	M³	125886
	101.00	M³	Fifth Depth 8.00 to 10.00 m	1558.00	M³	157358
	101.00	M³	Sixth Depth 10.00 to 12.00 m	1869.60	M³	188830
5	25.00	M³	Plain Cement Concrete M10 using graded metal 40 : 60 of 20mm and 40 mm gauge hard broken granite stone jelly for all concrete items of works complete complying with standard specification and as directed by departmental officers- Foundation and basement	4650.97	M³	116274

6			Reinforced Cement Concrete M25 using 20 mm gauge hard broken granite stone jelly for all RCC items of works excluding cost of reinforcement grill and fabricating charges, centering and shuttering but including laying, vibrating with mechanical vibrators, finishing, curing, etc. and providing fixtures like fan clamps in the RCC floor / roof slabs wherever necessary and bearing surfaces of walls, beams etc. shall be finished smooth with Cement Mortar 1:3 (One Cement and Three Sand) and kraft paper laid over it without claiming extra, etc., complete complying with standard specification and as directed by the departmental officers- Foundation and basement. (Including Centering)			
	48.00	M^3	Above ground level	12552.79	M^3	602534
	25.00	M^3	o m to 1.5m below GL	11826.24	M^3	295656
	77.00	M^3	1.5m to 4.5m Depth below GL	9681.88	M^3	745505
7	2.00	M^3	No Fine Cement Concrete CC 1:4 using 20 mm gauge hard broken granite stone jelly for all Concrete items complete complying with standard specification and as directed by the departmental officers- Foundation and basement.(Including Centering)	7015.50	M^3	14031
8	108.00	Qtl	Supplying, fabricating and placing in position Mild Steel / Ribbed Tor Steel grills for all RCC works as per design given including cost of steel and G.I. binding wire in all floors etc. complete complying with standard specification. (Contractor has to make his own arrangements for the supply of steel and binding wire)	6925.00	Qtl	747900
9	100.00	RM	(a) Drilling of 150 mm dia Vertical bore wells in hard rock areas to the required depth as directed by the departmental officers including labour charges for inserting casing pipes assembly in the drilled holes, if necessary grouting the casing pipe etc., including transportation charges for the rigs and supporting vehicles from one place to another place (the casing pipe has to be supplied by the contractor at the rates noted in a separate item) Rate as per TWAD BOARD SOR.	783.18	RM	78318
10	120.00	RM	(b) Drilling of 150 mm (6" dia) Horizontal bore wells (Rate as per TWAD BOARD SOR.)	827.78	RM	99334
11	37.60	RM	Supplying and erection of PVC Special Blue slotted pipes for Borewells of size 140 mm dia with standard specifications.	406.00	RM	15266

12	4.00	No	Supplying and Fixing of PVC End cap of size 150 mm dia,6 Kg best approved quality with ISI mark complete complying with standard specifications.	111.00	No	444
13	25.00	M^3	Supplying and Filling of 40mm HBS jelly including cost and conveyance of meterials to site of work with standard specifications.	1226.30	M^3	30658
14	25.00	M^3	Supplying and Filling of river sand including cost and conveyance of meterials to site of work with standard specifications.	923.36	M^3	23084
15	34.00	M^2	Supplying and fixing of chain link fencing	185.00	M^2	6290
16	32.00	M^2	Supplying and fixing of Mild steel grill gate for chain link fencing	72.00	M^2	2304
17	980.00	M^3	Connveyance of excavated earth and blastered materials from initial lead to outside the tank with a lead of 2km including all cost as directed by the departmental officers.	96.80	M^3	94864
18	1000.00	Hrs	Dewatering with diesel engine and pump during excavation of soils and during construction of artificail recharge structures Cost VIDE TWAD BOARD schedule of rates	333.89	Hrs	333890
19	1500.00	Kg	Supplying Mild steel grill works for , including priming coat as per standard specifications.	72.00	Kg	108000
20	1960.00	Kg	Supplying and fixing of MS Angle for Truss work	82.80	Kg	162288
21	60.00	m^2	Supplying and erecting of Weld mesh 10 x 10 cm 10 gauge as per standard Specifications.	170.00	m^2	10200
22	180.00	m^2	Painting Ironwork (or) cement work in 2 coats with enamal paint including cost of paint etc.,Complete complying with standard specification.	118.00	m^2	21240
					Total	**4177483**

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Ground Water Sub Division
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CONSTRUCTION OF ARTIFICIAL RECHARGE WELL STRUCTURES 3No's IN MANIMUKTHA SUBBASIN (TANKS–CHITTALUR, KUDIYANALLUR AND THYIYAGAI) OF KALLAKURICHI DISTRICT UNDER GROUND WATER COMPONENT

Lead Statement Kudiyanallur

Sl No.	Description of material	Unit	Source of supply	Lead in Kmmr.	Cost of Material	Lead Charges	Total cost at site
1	Cement	Mt.	Thiyagadurugam	10	5800.00	65.10	5865.10
2	Steel	Mt.	Thiyagadurugam	10	45000.00	65.10	45065.10
3	Sand for mortar	m^3	Arasur	52	447.00	432.68	879.68
4	Sand for filling	m^3	Arasur	52	447.00	432.68	879.68
5	Hard broken stone jelly 40 mm	m^3	Elavanasurkottai	17	1004.00	166.30	1170.30
6	Hard broken stone jelly 20 mm	m^3	Elavanasurkottai	17	1398.00	166.30	1564.30
7	Rough stone for masonry	m^3	Elavanasurkottai	17	437.00	166.30	603.30
8	Rough stone for revetment	m^3	Elavanasurkottai	17	378.00	166.30	544.30
9	Bond stone	m^3	Elavanasurkottai	17	630.00	166.30	796.30
11	Cut stone fully dressed	m^3	Supplied at site	--	6256.00		6256.00
12	Country wood planks (upto 30cm wide -25mm thick)	m^3	,,	--	39400.00		39400.00
13	Country wood scantling (up to 4m length)	m^3	,,	--	34300.00		34300.00

Certified that the lead Partculars Given above are correct and nearest to the best of my knowledge.
Certified that the rates adopted are as per the current schedule of rates for the year 2020-21

31/5/22

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31/5/22

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CONSTRUCTION OF ARTIFICIAL RECHARGE WELL STRUCTURES 3No's IN MANIMUKTHA SUBBASIN (TANKS–CHITTALUR, KUDIYANALLUR AND THYIYAGAI) OF KALLAKURICHI DISTRICT UNDER GROUND WATER COMPONENT

DATA

Sl. No.	Qty.	Unit	Description	Rate in rupees	Per	Amount in rupees
			SUB DATA			
1			CEMENT MORTAR 1:2			
	720.00	KG	CEMENT	5865.10	MT	4222.87
	1.00	cu.m.	SAND FOR MORTAR	879.68	cu.m.	879.68
	1.00	cu.m.	MIXING CHARGES (Machine Mixing)	115.00	cu.m.	115.00
			Rate for 1 cu.m.			**5217.55**
2			CEMENT MORTAR 1:3			
	480.00	KG	CEMENT	5865.10	MT	2815.25
	1.00	cu.m.	SAND FOR MORTAR	879.68	cu.m.	879.68
	1.00	cu.m.	MIXING CHARGES (Machine Mixing)	115.00	cu.m.	115.00
			Rate for 1 cu.m.			**3809.93**
3			CEMENT MORTAR 1:4			
	360.00	KG	CEMENT	5865.10	MT	2111.44
	1.00	cu.m.	SAND FOR MORTAR	879.68	cu.m.	879.68
	1.00	cu.m.	MIXING CHARGES (Machine Mixing)	115.00	cu.m.	115.00
			Rate for 1 cu.m.			**3106.12**
4			CEMENT MORTAR 1:5			
	288.00	KG	CEMENT	5865.10	MT	1689.15
	1.00	cu.m.	SAND FOR MORTAR	879.68	cu.m.	879.68
	1.00	cu.m.	MIXING CHARGES (Machine Mixing)	115.00	cu.m.	115.00
			Rate for 1 cu.m.			**2683.83**
5			CEMENT MORTAR 1:6			
	240.00	KG	CEMENT	5865.10	MT	1407.62
	1.00	cu.m.	SAND FOR MORTAR	879.68	cu.m.	879.68
	1.00	cu.m.	MIXING CHARGES (Machine Mixing)	115.00	cu.m.	115.00
			Rate for 1 cu.m.			**2402.30**
6			Labour wrought and put up for 1 cu.m.			
	4.50	Nos.	Carpenter I Class	752.00	Each	3384.00
	13.20	Nos.	Carpenter II Class	718.00	Each	9477.60
	8.80	Nos.	Mazdoor I Class	502.00	Each	4417.60
			Sundries for nails, screws, etc.			172.79
			Total			17452.00
			Rate for 1 cu.m.			**17452.00**
7			Priming coat for new iron work - 10 sq.m.			
	1.33	lit.	Red oxide primer	134.30	lit.	178.62
	0.70	Nos.	Painter I Class	615.00	Nos.	430.50
			Sundries for brushes etc.,		LS	2.65
			Rate for 1 sq.m.			**61.00**
			MAIN DATA			
	1.00	m^3	Clearing the scrub jungle	**4.10**	m^3	**4.10**

Sl. No.	Qty.	Unit	Description	Rate in rupees	Per	Amount in rupees
8			Earth work open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in Hard stiff clay, stiff black coton soil, hard red earth, shales, murram, gravel, stoney earth and earth mixed with small size boulders and hard gravely soil - First depth of 2 metre			
	1.00	m^3	**As per Schedule of Rate upto 2m**	83.80	m^3	83.80
9			Earth work open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in soft disintegrated rock, laterite, soft rock or kankar not requiring blasting - First depth of 2 metre			
	1.00	m^3	**As per Schedule of Rate Upto 2m.**	129.10	m^3	129.10
			Upto 2-4m.	258.20		258.20
			Upto 4-6m.	387.30		387.30
			Upto 6-8m.	516.40		516.40
			Upto 8-10m.	645.50		645.50
9			Open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in Medium rock and dense medium rock requring blasting - First depth of 2 metre			
	1.00	m^3	**As per Schedule of Rate Upto 2m.**	311.60	m^3	311.60
			Second Depth above 3-4m	623.20		623.20
			Third Depth above 4-6m	934.80		934.80
			Fourth Depth above 6-8m	1246.40		1246.40
			Fifth Depth above 8-10m	1558.00		1558.00
10			Open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in Medium rock and dense medium rock requiring blasting - First depth of 2 metre			
	1.00	m^3	**As per Schedule of Rate Upto 2m.**	311.60	m^3	311.60
			Fifth Depth above 8-10m	1558.00		1558.00
			Depth above 10-12m	1869.60		1869.60
			Depth above 12-14m	2492.80		2492.80
			Depth above 14-16m	3116.00		3116.00
			Depth above 16-18m	3739.20		3739.20
			Depth above 18-20m	4362.40		4362.40
11			Open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in Hard granite measured in solid including blasting and stacking - First depth of 2 metre			
	1.00	m^3	**As per Schedule of Rate Upto 2m.**	609.50	m^3	609.50
			Sixth Depth above 10-12m	3657.00		3657.00
12			Plain Cement Concrete M10 using graded metal 40 : 60 of 20mm and 40 mm gauge hard broken granite stone jelly for all concrete items of works complete complying with standard specification and as directed by the departmental officers- Foundation and			
	3.60	cu.m.	Broken stone jelly 20mm	1564.30	cu.m.	5631.48
	5.40	cu.m.	Broken stone jelly 40mm	1170.30	cu.m.	6319.62
	4.50	cu.m.	Cement mortar 1:3	3809.93	cu.m.	17144.68
	1.80	Nos.	Mason II Class	718.00	Each	1292.40
	17.70	Nos.	Mazdoor I Class	502.00	Each	8885.40

Sl. No.	Qty.	Unit	Description	Rate in rupees	Per	Amount in rupees
	14.10	Nos.	Mazdoor II Class	412.00	Each	5809.20
	10.00	cu.m.	mixing charges	115.00	cu.m.	1150.00
			Total for 10 cu.m.			46232.78
			Rate for 1 cu.m.			**4623.28**
13			Centering For plane surfaces such as RCC floor slab, roof slab, beams, lintels, bed blocks, landing slab, waist slab, portico slabs and beams, etc.			
			Sub Data: 1			
			Cost of MS sheets and angles for each set:			
			Weight of MS sheets 10 gauge of size 90cm x 60cm x 3.175mm			
			3.175 x 7850 / 1000 x 0.54 =	13.46	Kg	
			Weight of MS angles of size 25cm x 25mm x 3mm:			
			3.6 x 1.1 kg / m =	4.00	Kg	
	13.46	Kg	Cost of MS sheets	41.20	Kg	554.55
	4.00	Kg	Cost of MS angles	41.20	Kg	164.80
						719.35
	LS		Add for cutting, bending, welding charges etc.		LS	70.65
			Total for one set (A)			**790.00**
			Sub Data: 2			
			Cost of MS sheets and angles and silver oak joists and casurina props for 1 sq.m.			
	19.00	Set	Cost of MS sheets and MS angles (as per A) (Adopting 40 uses)	790.00	Each	15010.04
			Total for 40 uses			15010.04
			Total for 1 use / 10 sq.m. (B)			**375.25**
	0.12	cu.m.	Cost of silver oak joists of size 10cm x 6.5cm	15500.00	cu.m.	1860.00
	98.50	RM	Cost of casurina props 10 to 13cm dia.	25.20	RM	2482.20
			Total for 5 uses			**4342.20**
			(Adopting 5 uses for silver oak / country wood joists and casurina props			4342.20
			Total for 1 use / 10 sq.m. (C)			**868.44**
			Main Data for centering for 10 sq.m.			
	10.00	sq.m.	Cost of MS sheets and angles (B)	375.25	10 Sq m	375.25
	10.00	sq.m.	Cost of silver oak joists and casurina props	868.44	10 Sq m	868.44
		LS	Add for silver planks		LS	40.00
	3.80	Nos.	Carpenter I Class	752.00	Each	2857.60
	5.40	Nos.	Mazdoor I Class	502.00	Each	2710.80
	1.00	No	Fitter II Class	660.00	Each	660.00
		LS	Add for wedges, coils, nails, etc.,		LS	50.00
		LS	For periodical cleaning and painting of MS sheets & angles (5% of cost of sheet & angle)		LS	87.91
			Total for 10 sq.m.			7650.00
						765.00
			Deduct rate for strutting plain surface		88.70	88.70
			(or) say, Rate for 1 sq.m. (a)			**676.30**
			Sub-Data for strutting for 10 Sq.m			
	98.50		Casurina props 10 to 13 cm dia.	25.20		2482.20
			Assuming 5 uses, Rate for 1 use			496.44
	0.3		Carpenter I Class	752.00		225.60

Sl. No.	Qty.	Unit	Description	Rate in rupees	Per	Amount in rupees
	0.3		Mazdoor I class	**502.00**		150.60
	LS		Add for Wedges and nails	10.00		14.36
			Total			**887.00**
			Rate for 1 Sq.m	**88.70**		
15			Supplying erection and CENTERING for sides and soffits of plain surfaces such as slab etc., using M.S. Sheets of size 90cmx60cmxBG 10 guage stiffended etc., complete complying with standard specification - **Circular centering.**			
	1.00	sq.m.	Centering for slabs beams etc., as per (a)	676.30	sq.m.	676.30
			Add 50% extra			338.15
			Total for 1 sq.m.			**1014.45**
16			Reinforced Cement Concrete M25 using 20 mm gauge hard broken granite stone jelly for all RCC items of works excluding cost of reinforcement grill and fabricating charges, centering and shuttering but including laying, vibrating with mechanical vibrators, finishing, curing, etc. and providing fixtures like fan clamps in the RCC floor / roof slabs wherever necessary and bearing surfaces of walls, beams etc. nd) and kraft paper laid over it without claiming extra, etc., complete complying with standard specification and as directed by the departmental officers- Foundation and basement.			
	9.00	cu.m.	20mm Machine Crushed Stone Jelly	1564.30	cu.m.	14078.70
	4.50	cu.m.	Sand	879.68	cu.m.	3958.56
	4033.00	kg	Cement	5865.10	MT	23653.95
	3.50	Nos.	Mason II Class	718.00	Each	2513.00
	21.20	Nos.	Mazdoor I Class	502.00	Each	10642.40
	35.30	Nos.	Mazdoor II Class	412.00	Each	14543.60
	4.50	cu.m.	Mixing Charges	115.00	cu.m.	517.50
	10.00	cu.m.	Vibration Charges	70.70	cu.m.	707.00
			Total for 10 cu.m.			70614.70
						7061.47
			Rate for 1 cu.m.			**7061.47**
			Rate for 1 cu.m.:			
a			0m upto 1.5m below ground level			**7061.47**
b			For Above Ground level up to 4.5m Ht	7061.47	89.90	**7151.37**
c			For 1.50m to 4.50m depth below ground level	7061.47	88.50	**7149.97**
17			No Fine Cement Concrete CC 1:4 using 20 mm gauge hard broken granite stone jelly for all Concrete items complete complying with standard specification and as directed by the departmental officers- Foundation and basement.			
	1620.00	kg	Cement	5865.10	MT	9501.46
	9.00	cu.m.	Broken stone 20mm.	1564.30	cu.m.	14078.70
	1.80	Nos.	Mason II Class	718.00	Each	1292.40
	17.70	Nos.	Mazdoor I Class	502.00	Each	8885.40
	14.10	Nos.	Mazdoor II Class	412.00	Each	5809.20
			Total for 10 cu.m.			39567.16
						3956.72
			Mixing Charges			115.00
			Rate for 1 cum.			**4072.00**

Sl. No.	Qty.	Unit	Description	Rate in rupees	Per	Amount in rupees
18			Supplying, fabricating and placing in position Mild Steel / Ribbed Tor Steel grills for all RCC works as per design given including cost of steel and G.I. binding wire in all floors etc. complete complying with standard specification. (Contractor has to make his own arrangements for the supply of steel and binding wire)			
			MS (or) RTS rods			
	1.00	Qtl	Cost of steel	45065.10	MT	4506.51
	0.01	Qtl	Binding wire	43.75	Kg	43.75
	3.50	Nos.	Fitter I Class	679.00	Each	2376.50
			Rate for 1 Quintal			**6927.00**
19			Drilling of 150 mm (6" dia) Vertical bore wells in hard rock areas to the required depth as directed by the departmental officers including labour charges for inserting casing pipes assembly in the drilled holes, if necessary grouting the casing pipe etc., including transportation charges for the rigs and supporting vehicles from one place to another place (the casing pipe has to be supplied by the contractor at the rates noted in a separate item) Rate as per TWAD BOARD SOR 2019-20 page 265 Sl.No.11a			
	1.00	Rm				
			Rate Rs:	783.18	/Rm	783.18
20			Drilling of 150 mm (6" dia) Horizontal bore wells in hard rock areas to the required depth as directed by the departmental officers including labour charges for inserting casing pipes assembly in the drilled holes, if necessary grouting the casing pipe etc., including transportation charges for the rigs and supporting vehicles from one place to another place (the casing pipe has to be supplied by the contractor at the rates noted in a separate item) Rate as per TWAD BOARD SOR 2019-20 page 265 Sl.No.11b			
	1.00	Rm				
			Rate Rs:	827.78	/Rm	827.78
21			Supplying and erection of PVC Special Blue slotted pipes for Borewells of size 140 mm dia with standard specifications.			
	1.00	Rm	As per Schedule of Rate 2020-21 Item	**406.00**		
			Rate Rs:	406.00	/Rm	406.00
22			Supplying and fixing of end cap with screws suitable to 150 mm dia PVC pipes as per standard specifications.			
	1.00	No.	As per SOR 2020-21 item No. 369(C)(c)			
			Rate Rs:	111.00	/No.	111.00
23			Supplying and Filling of 40mm HBS jelly including cost and conveyance of meterials to site of work with standard specifications.			
	1.00	cu.m	40mm.jelly	1170.30		1170.30
			filling charges (item no.85)	29.30		29.30
			Rate for 1 cu. M			**1199.60**
24			Supplying and fixing of chain link fencing of size 5 x 5 cm using iron wire of all size with standard specification			
	1.00	m^2	As per sheduled of rate pg.44(.item no.104)	157.20	m^2	157.20
			fixing charges	27.80		27.80
			Rate for 1 Sq. M			**185.00**

Sl. No.	Qty.	Unit	Description	Rate in rupees	Per	Amount in rupees
25			Supplying and Filling of river sand including cost and conveyance of meterials to site of work with standard specifications.			
	1.00	cu.m.	Cost of sand for filling	879.68	cu.m.	879.68
			filling charges	29.30		29.30
			Rate for 1 cu.m.			**908.98**
26			Supplying Mild steel grill works for windows ventilators, gates, etc., including priming coat as per standard specifications.			
	1.00	Kg	As per Schedule of Rates item 131	54.50	Kg	54.50
			Fixing Charges	17.50		17.50
			Rate for 1Kg			**72.00**
27			Supplying and erecting of weldmesh 10x10 cm 10 gauge as per standard specification.			
	1.00	Kg	As per Schedule of Rates item 126(iii)	143.00	Kg	143.00
			Fixing Charges	27.00		27.00
			Rate for 1Kg			**170.00**
28			Painting Ironwork (or) cement work in 2 coats with enamal paint including cost of paint etc.,Complete complying with standard specification.			
	2.22	Litre	Ready mixed enamel paint	223.20	Litre	495.50
	1.10	Nos.	Painter I Class	615.00	Each	676.50
		l.s	Sundries for brushes, soap, putty, etc.			8.00
			Total for 10 sq.m.			1180.00
			Rate for 1 sq.m.			**118.00**
29			Conveyance of excavated earth and blastered materials from initial lead to outside the tank with a lead of 2km including all cost as directed by the departmental officers.			
	1.00	m^3	Loading cost (38.00+38.00)	76.00	m^3	76.00
	1.00	m^3	Lead charges 2 Km	20.80	m^3	20.80
			Rate for 1 sq.m.			**96.80**
30			Supplying and fixing of MS Angles for Truss work as per standard specifications.			
	1.00	Kg	As per Schedule of Rates item 112	41.20	Kg	41.20
			Fixing Charges Sl No 167	41.60	Kg	41.60
			Rate for 1Kg			**82.80**
31			Hire charges for Diesel pump sets 3HP TO 7.50 HP for bailing out water for foundations including the cost of fuel crew and transportation charges etc., complete complying with standard specification and as directed by the Departmental Officers.			
						333.89
			Rate for per hour = Rs		333.89	

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Kudiyanallur Tank - Rate of RCC including Centering

S.No.	Description	Qty	Rate	Per	Amount
1	**Above GL**				
	Quantity of RCC(As per Detailed)	48	7151.37	m^3	343266
	Circular Centering				
	Inner Wall both sides	233.62	1014.45	m^2	236996
	Plain centering				
	Fencing post	19.44			
	Steps	5.4			
	Steps Alround	6.3			
		31.14	676.30	m^2	21060
				Total Amt.	**601322**
	Rate of concrete including Centering	**601322 / 48**	**12527.54**	**m^3**	
2	**0 m to 1.5 m Below GL**				
	Quantity of RCC(As per Detailed)	25	7061.47	m^3	176537
	Circular Centering				
	Inner Wall both sides (1x2x3.14x12.4x1.5)	116.8	1014.45	m^2	118488
	Plain centering	-	-	-	-
				Total Amt.	**295025**
	Rate of concrete including Centering	**295025 / 25**	**11801**	**m^3**	
3	**1.5 m to 4.5 m Below GL**				
	Quantity of RCC(As per Detailed)	77	7149.97	m^3	550548
	Circular Centering				
	Inner Wall both sides (1x2x3.14x12.4x1)	77.87			
	Inner Wall Footing	38.94			
	Well beam	52.12			
		168.93	1014.45	m^2	171371
	Plain centering				
	Retaining Wall Base	3.2			
	Retaining Wall	28.8			
		32	676.30	m^2	21642
					743561
	Rate of concrete including Centering	**743561 / 77**	**9656.64**	**m^3**	
4	**No fine Concrete**				
	Quantity of Concrete (As per Detailed)	2	4072.00	m^3	8144
	Circular Centering				
	Plain centering				
	No fine Concrete	8.64	676.30	m^2	5843
					13987
	Rate of concrete including Centering	**13987 / 2**	**6993.5**	**m^3**	

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CONSTRUCTION OF ARTIFICIAL RECHARGE WELL STRUCTURES 3No's IN MANIMUKTHA SUBBASIN (TANKS–CHITTALUR, KUDIYANALLUR AND THYIYAGAI) OF KALLAKURICHI DISTRICT UNDER GROUND WATER COMPONENT										
DETAILED ESTIMATE FOR KUDIYANALLUR										
SL. No	**DESCRIPTION OF ITEMS**	**NO**				**L**	**B**	**D**	**QTY**	
1	Clearing Scrub jungle	1	x	1		50.00	50.00		2500.00	
2	Earth work open well excavation complying with relevant clauses and with lead upto 10 meter in Hard stiff clay, stiff black cotton soil, hard red earth, shales, murram, gravel, stoney earth and earth mixed with small size boulders and hard gravely soil first depth of 2 meters.									
	RCC wall for well	1	x	1	3.14/4	14.20	14.20	1.00	158.29	
	Add extra								1.71	
	Total								**160.00** M^3	
3	Earth work open well excavation complying with relevant clauses and with lead upto 10 meters in soft disintegrated rock, laterite, soft rock or kankar not requiring blasting - Second depth 2.0 to 4.0m									
	RCC wall for well	1	x	1	3.14/4	14.20	14.20	2.00	316.57	
	RCC wall foundation	1	x	1	3.14	12.40	2.00	0.60	46.72	
	Add extra								0.70	
	Total								**364.00** M^3	
4	Earth work open well excavation complying with relevant clauses and with lead upto 10 m in medium rock and dense medium rock requiring blasting.									
	Open well (2.00m-4.00m)	1	x	1	3.14/4	8.00	8.00	1.00	50.24 M^3	
	Add extra								0.76	
									51.00 M^3	
	Open well (4.00m-6.00m)	1	x	1	3.14/4	8.00	8.00	2.00	100.48 M^3	
	Add extra								0.52	
									101.00 M^3	
	Open well (6.00m-	1	x	1	3.14/4	8.00	8.00	2.00	100.48 M^3	
	Add extra								0.52	
									101.00 M^3	
	Open well (8.00m-10.00m)	1	x	1	3.14/4	8.00	8.00	2.00	100.48 M^3	
	Add extra								0.52	
									101.00 M^3	
	Open well (10.00m-12.00m)	1	x	1	3.14/4	8.00	8.00	2.00	100.48 M^3	
	Add extra								0.52	
									101.00 M^3	

5	Plain Cement Concrete M10 using graded metal 40 : 60 of 20mm and 40 mm gauge hard broken granite stone jelly for all concrete items of works complete complying with standard specification and as directed by the departmental officers- Foundation and basement.								
	RCC Wall Foundation	1	x	1	3.14	12.40	2.00	0.10	7.79
	Berm	1	x	1	3.14	10.30	1.70	(0.35+0.20) /2	15.12
	Ret . Wall	1	x	1		4.00	2.00	0.15	1.20
	Add Extra								0.89
	Total								**25.00** M^2
6	Supplying erection and CENTERING for sides and soffits of plain surfaces such as slab etc., using M.S. Sheets of size 90cmx60cmxBG 10 guage stiffended etc., complete complying with standard specification - Circular centering.								
	Below Ground Level								
	RCC wall footing	1	x	2	3.14	12.40		0.50	38.94
	RCC wall both sides	1	x	2	3.14	12.40		2.50	194.68
	Grade beam	1	x	2	3.14	8.30		1.00	52.12
	Add extra								4.26
	Total								**290.00** M^2
	Above Ground Level								
	RCC wall both sides	1	x	2	3.14	12.40		3.00	233.62
	Add extra								6.38
	Total								**240.00** M^2
7	Supplying erection and CENTERING for sides and soffits of plain surfaces such as slab etc., using M.S. Sheets of size 90cmx60cmxBG 10 guage stiffended etc., complete complying with standard specification -Foundation and basement centering.								
	Fencing Post	1	x	4	27	1.20	-	0.15	19.44
	No fine concrete	1	x	1	4	1.80	-	1.20	8.64
	steps	1	x	1	20	0.90	0.30	-	5.40
	Steps sides alround	1	x	1	20	2.10		0.15	6.30
	Ret Wall base	1	x	2		4.00	0.40	-	3.20
	Ret Wall	1	x	2		4.00	-	3.60	28.80
	Add Extra								0.22
	Total								**72.00** M^2

8	Reinforced Cement Concrete M25 using 20 mm gauge hard broken granite stone jelly for all RCC items of works excluding cost of reinforcement grill and fabricating charges, centering and shuttering but including laying, vibrating with mechanical vibrators, finishing, curing, etc. and providing fixtures like fan clamps in the RCC floor / roof slabs wherever necessary and bearing surfaces of walls, beams etc. and kraft paper laid over it without claiming extra, etc., complete complying with standard specification and as directed by the departmental officers- Foundation and basement.								
(a)	**Above GL**								
	Fencing Post	1	x	1	27	0.15	0.15	1.20	0.73
	RCC wall	1	x	1	3.14	12.40	0.40	3.00	46.72
	Deduction for porous concrete	1	x	54	3.14/4	0.15	0.15	0.40	-0.38
	steps	1	x	14		0.90	0.30	0.15	0.57
	Add Extra								0.36
	Total								**48.00** M^3
(b)	**0m to 1.5m below GL**								
	RCC wall	1	x	1	3.14	12.40	0.40	1.50	23.36
	steps	1	x	3		0.90	0.30	0.15	0.12
	Add Extra								1.52
	Total								**25.00** M^3
(c)	**1.5m to 4.5m below GL**								
	RCC wall base	1	x	1	3.14	12.40	1.80	0.20	14.02
	RCC wall base slope	1	x	1	3.14	12.40	(1.80+0.60)/2	0.30	14.02
	RCC wall base pedestal	1	x	1	3.14	12.40	0.60	0.50	11.68
	RCC Vertical wall	1	x	1	3.14	12.40	0.40	1.00	15.57
	steps	1	x	3		0.90	0.30	0.15	0.12
	Grade beam	1	x	1	3.14	8.30	0.30	1.00	7.81
	Ret.wall base	1	x	1		4.00	2.00	0.40	3.20
	Ret.wall	1	x	1		4.00	(0.6+0.45)/2	3.60	7.56
	Add Extra								3.02
	Total								**77.00** M^3
9	No Fine Cement Concrete CC 1:4 using 20 mm gauge hard broken granite stone jelly for all concrete items of works. complete complying with standard specification and as directed by the departmental officers- Foundation and basement.								
	For Vertical bore hole	1	x	4		0.45	0.45	1.20	0.97
	RCC wall no fine concrete	1	x	54	3.14/4	0.15	0.15	0.40	0.38
	Add Extra								0.65
	Total								**2.00** M^3

10	Supplying, fabricating and placing in position Mild Steel / Ribbed Tor Steel grills for all RCC works as per design given including cost of steel and G.I. binding wire in all floors etc. complete complying with standard specification. (Contractor has to make his own arrangements for the supply of steel and binding wire)								
	Quantity for Grade beam and Pedestal	1	x		1	51.05	70.00	-	3573.50
	Quantity for Vertical wall	1	x		1	93.95	75.00	-	7046.25
	Add extra for overlaps, joints etc.,								180.25
									10800.00 Kg
	Total								**108.00** Qtl
11	Drilling of 150 mm bore wells in hard rock areas to the required depth as directed by the departmental officers including labour charges for inserting casing pipes assembly in the drilled holes, if necessary grouting the casing pipe etc., including transportation charges for the rigs and supporting vehicles from one place to another place (the casing pipe has to be supplied by the contractor at the rates noted in a separate item) Rate as per TWAD BOARD SOR								
	Inside Open well(Vertical)	1	x		4	-	-	25.00	**100.00** RM
	Inside Open well(Horizontal)	1	x		4	-	-	30.00	**120.00** RM
12	Supplying and erection of PVC Special Blue slotted pipes for Borewells of size 140 mm dia with standard specifications.								
	For Vertical & horizontal Bore	1	x		8	-	-	2.00	**16.00** RM
	RCC wall no fine concrete	1	x	54				0.40	**21.60 RM**
								Total	**37.60 RM**
13	Supplying and Fixing of PVC End cap of size 150 mm dia,6 Kg best approved quality with ISI mark complete complying with standard specifications.								
	For Vertical Bore	1	x		4	-	-		**4.00** No's
14	Supplying and Filling of 40mm HBS jelly including cost and conveyance of materials to site of work with standard specifications.								
	Inside Open well	1	x		3.14/4	8.00	8.00	0.50	25.12
	Deduction for vertical borehole								-0.97
	Add Extra								0.85
									25.00 M^3

15	Supplying and Filling of river sand including cost and conveyance of materials to site of work with standard specifications.								
	Inside Open well	1	x		3.14/4	8.00	8.00	0.50	25.12
	Deduction for vertical borehole								-0.97
	Add Extra								0.85
									25.00 M^3
16	Supplying and fixing of chain link fencing								
	For open well	1	x	1	3.14	12.40	-	0.90	**35.04** M^2
	Deduction for Gate	1	x	1		0.90	-	1.20	**1.08** M^2
	Add Extra								0.04
									34.00 M^2
17	Supplying and Fixing MS Grill Gate								
	For Provision Gate	1	x	1		0.90	-	1.20	**1.08** M^2
	For $1m^2$ for 30Kg								**32.00** Kg
18	Conveyance of excavated earth and blasted materials from initial lead to outside the tank with a lead of 2km including all cost as directed by the departmental officers.								
	Quantity vide items 2,3,4								979.00 M^3
	Add Extra								1.00
	Total								**980.00**
19	Dewatering with diesel engine and pump during excavation of soils and during construction of artificial recharge structures Cost VIDE TWAD BOARD schedule of rates								
		1	x	1			100.00	10 Hrs/day	**1000.00** Hrs
	Total								**1000.00**
20	Supplying Mild steel grill works for , including priming coat as per standard specifications.								
	Open Well Covering	1	x	1	$\frac{3.14}{4}$	8.60	-	8.60	58.06
	Add Extra								1.94
									60.00
	At the rate of 25 Kg per M^2	1	x	1	1	60.00	25.00		**1500.00** Kg
21	Supplying and fixing of MS Angle for Truss work								
	Truss and Purlis (As per Calculation Sheet)								**1960.00** Kg
	Add Extra								**0.00** Kg
									1960.00 Kg

22	Supplying and erecting of Weld mesh 10 x 10 cm 10 gauge as per standard Specifications.								
	For Open Well	1	x	1	$\frac{3.14}{4}$	8.60	-	8.60	58.06
	Add Extra								1.94
									60.00
23	Painting Ironwork (or) cement work in 2 coats with enamal paint including cost of paint etc.,Complete complying with standard specification.								
	Grill & Weld Mesh	1	x	3	$\frac{3.14}{4}$	8.60	-	8.60	174.18
	Add Extra								5.82
									180.00

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CONSTRUCTION OF ARTIFICIAL RECHARGE WELL STRUCTURES 3No's IN MANIMUKTHA SUBBASIN (TANKS–CHITTALUR, KUDIYANALLUR AND THYIYAGAI) OF KALLAKURICHI DISTRICT UNDER GROUND WATER COMPONENT KUDIYANALLUR TANK						
ABSTRACT ESTIMATE						
Sl. No.	**Qty**	**Unit**	**Description**	**Rate**	**Per**	**Amount**
1	2500.00	M2	Clearing Scrub jungle	4.10	M2	10250
2			Earth work open well excavation complying with relevant clauses and with lead upto 10 meter in Hard stiff clay, stiff black cotton soil, hard red earth, shales, murram, gravel, stoney earth and earth mixed with small size boulders and hard gravely soil first depth of 2 meters			
	160.0	M^3	First Depth of 0-1 m	83.80	M^3	13408
3			Earth work open well excavation complying with relevant clauses and with lead upto 10 meters in soft disintegrated rock, laterite, soft rock or kankar not requiring blasting - Second depth			
	364.0	M^3	Second Depth 2.00 to 3.00m	258.20	M^3	93985
4			Earth work open well excavation complying with relevant clauses and with lead upto 10 m in medium rock and dense medium rock requiring blasting.			
	51.00	M^3	Second Depth 3.00 to 4.00 m	623.20	M^3	31783
	101.00	M^3	Third Depth 4.00 to 6.00 m	934.80	M^3	94415
	101.00	M^3	Fourth Depth 6.00 to 8.00 m	1246.40	M^3	125886
	101.00	M^3	Fifth Depth 8.00 to 10.00 m	1558.00	M^3	157358
	101.00	M^3	Sixth Depth 10.00 to 12.00 m	1869.60	M^3	188830
5	25.00	M^3	Plain Cement Concrete M10 using graded metal 40 : 60 of 20mm and 40 mm gauge hard broken granite stone jelly for all concrete items of works complete complying with standard specification and as directed by the departmental officers- Foundation and basement	4623.28	M^3	115582

6			Reinforced Cement Concrete M25 using 20 mm gauge hard broken granite stone jelly for all RCC items of works excluding cost of reinforcement grill and fabricating charges, centering and shuttering but including laying, vibrating with mechanical vibrators, finishing, curing, etc. and providing fixtures like fan clamps in the RCC floor / roof slabs wherever necessary and bearing surfaces of walls, beams etc. shall be finished smooth with Cement Mortar 1:3 (One Cement and Three Sand) and kraft paper laid over it without claiming extra, etc., complete complying with standard specification and as directed by the departmental officers- Foundation and basement. (Including			
	48.00	M^3	Above ground level	12527.54	M^3	601322
	25.00	M^3	o m to 1.5m below GL	11801.00	M^3	295025
	77.00	M^3	1.5m to 4.5m Depth below GL	9656.64	M^3	743561
7	2.00	M^3	No Fine Cement Concrete CC 1:4 using 20 mm gauge hard broken granite stone jelly for all Concrete items complete complying with standard specification and as directed by the departmental officers- Foundation and basement.(Including Centering)	6993.50	M^3	13987
8	108.00	Qtl	Supplying, fabricating and placing in position Mild Steel / Ribbed Tor Steel grills for all RCC works as per design given including cost of steel and G.I. binding wire in all floors etc. complete complying with standard specification. (Contractor has to make his own arrangements for the supply of steel and binding wire)	6927.00	Qtl	748116
9	100.00	RM	(a) Drilling of 150 mm dia Vertical bore wells in hard rock areas to the required depth as directed by the departmental officers including labour charges for inserting casing pipes assembly in the drilled holes, if necessary grouting the casing pipe etc., including transportation charges for the rigs and supporting vehicles from one place to another place (the casing pipe has to be supplied by the contractor at the rates noted in a separate item) Rate as per TWAD BOARD SOR.	783.18	RM	78318
10	120.00	RM	(b) Drilling of 150 mm (6" dia) Horizontal bore wells (Rate as per TWAD BOARD SOR.)	827.78	RM	99334
11	37.60	RM	Supplying and erection of PVC Special Blue slotted pipes for Borewells of size 140 mm dia with standard specifications.	406.00	RM	15266

12	4.00	No	Supplying and Fixing of PVC End cap of size 150 mm dia,6 Kg best approved quality with ISI mark complete complying with standard specifications.	111.00	No	444
13	25.00	M^3	Supplying and Filling of 40mm HBS jelly including cost and conveyance of meterials to site of work with standard specifications.	1199.60	M^3	29990
14	25.00	M^3	Supplying and Filling of river sand including cost and conveyance of meterials to site of work with standard specifications.	908.98	M^3	22725
15	34.00	M^2	Supplying and fixing of chain link fencing	185.00	M^2	6290
16	32.00	M^2	Supplying and fixing of Mild steel grill gate for chain link fencing	72.00	M^2	2304
17	980.00	M^3	Connveyance of excavated earth and blastered materials from initial lead to outside the tank with a lead of 2km including all cost as directed by the departmental officers.	96.80	M^3	94864
18	1000.00	Hrs	Dewatering with diesel engine and pump during excavation of soils and during construction of artificail recharge structures Cost VIDE TWAD BOARD schedule of rates	333.89	Hrs	333890
19	1500.00	Kg	Supplying Mild steel grill works for , including priming coat as per standard specifications.	72.00	Kg	108000
20	1960.00	Kg	Supplying and fixing of MS Angle for Truss work	82.80	Kg	162288
21	60.00	m^2	Supplying and erecting of Weld mesh 10 x 10 cm 10 gauge as per standard Specifications.	170.00	m^2	10200
22	180.00	m^2	Painting Ironwork (or) cement work in 2 coats with enamal paint including cost of paint etc.,Complete complying with standard specification.	118.00	m^2	21240
					Total	**4218661**

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CONSTRUCTION OF ARTIFICIAL RECHARGE WELL STRUCTURES 3No's IN MANIMUKTHA SUBBASIN (TANKS–CHITTALUR, KUDIYANALLUR AND THYIYAGAI) OF KALLAKURICHI DISTRICT UNDER GROUND WATER COMPONENT

Lead Statement Thyiyagai

Sl No.	Description of material	Unit	Source of supply	Lead in Kmmr.	Cost of Material	Lead Charges	Total cost at site
1	Cement	Mt.	Thiyagadurugam	12	5800.00	76.24	5876.24
2	Steel	Mt.	Thiyagadurugam	12	45000.00	76.24	45076.24
3	Sand for mortar	m^3	Arasur	48	447.00	403.92	850.92
4	Sand for filling	m^3	Arasur	48	447.00	403.92	850.92
5	Hard broken stone jelly 40 mm	m^3	Elavanasurkottai	22	1004.00	208.34	1212.34
6	Hard broken stone jelly 20 mm	m^3	Elavanasurkottai	22	1398.00	208.34	1606.34
7	Rough stone for masonry	m^3	Elavanasurkottai	22	437.00	208.34	645.34
8	Rough stone for revetment	m^3	Elavanasurkottai	22	378.00	208.34	586.34
9	Bond stone	m^3	Elavanasurkottai	22	630.00	208.34	838.34
11	Cut stone fully dressed	m^3	Supplied at site	--	6256.00		6256.00
12	Country wood planks (upto 30cm wide -25mm thick)	m^3	,,	--	39400.00		39400.00
13	Country wood scantling (up to 4m length)	m^3	,,	--	34300.00		34300.00

Certified that the lead Partculars Given above are correct and nearest to the best of my knowledge.
Certified that the rates adopted are as per the current schedule of rates for the year 2020-21

31/07/21

Assistant Engineer, P.W.D
Ground water section
Neyveli.

31/7/21

Assistant Executive Engineer, P.W.D.(I/c)
Ground Water Sub Division
Neyveli

CONSTRUCTION OF ARTIFICIAL RECHARGE WELL STRUCTURES 3No's IN MANIMUKTHA SUBBASIN (TANKS–CHITTALUR, KUDIYANALLUR AND THYIYAGAI) OF KALLAKURICHI DISTRICT UNDER GROUND WATER COMPONENT

DATA

Sl. No.	Qty.	Unit	Description	Rate in rupees	Per	Amount in rupees
			SUB DATA			
1			CEMENT MORTAR 1:2			
	720.00	KG	CEMENT	5876.24	MT	4230.89
	1.00	cu.m.	SAND FOR MORTAR	850.92	cu.m.	850.92
	1.00	cu.m.	MIXING CHARGES (Machine Mixing)	115.00	cu.m.	115.00
			Rate for 1 cu.m.			**5196.81**
2			CEMENT MORTAR 1:3			
	480.00	KG	CEMENT	5876.24	MT	2820.60
	1.00	cu.m.	SAND FOR MORTAR	850.92	cu.m.	850.92
	1.00	cu.m.	MIXING CHARGES (Machine Mixing)	115.00	cu.m.	115.00
			Rate for 1 cu.m.			**3786.52**
3			CEMENT MORTAR 1:4			
	360.00	KG	CEMENT	5876.24	MT	2115.45
	1.00	cu.m.	SAND FOR MORTAR	850.92	cu.m.	850.92
	1.00	cu.m.	MIXING CHARGES (Machine Mixing)	115.00	cu.m.	115.00
			Rate for 1 cu.m.			**3081.37**
4			CEMENT MORTAR 1:5			
	288.00	KG	CEMENT	5876.24	MT	1692.36
	1.00	cu.m.	SAND FOR MORTAR	850.92	cu.m.	850.92
	1.00	cu.m.	MIXING CHARGES (Machine Mixing)	115.00	cu.m.	115.00
			Rate for 1 cu.m.			**2658.28**
5			CEMENT MORTAR 1:6			
	240.00	KG	CEMENT	5876.24	MT	1410.30
	1.00	cu.m.	SAND FOR MORTAR	850.92	cu.m.	850.92
	1.00	cu.m.	MIXING CHARGES (Machine Mixing)	115.00	cu.m.	115.00
			Rate for 1 cu.m.			**2376.22**
6			Labour wrought and put up for 1 cu.m.			
	4.50	Nos.	Carpenter I Class	752.00	Each	3384.00
	13.20	Nos.	Carpenter II Class	718.00	Each	9477.60
	8.80	Nos.	Mazdoor I Class	502.00	Each	4417.60
			Sundries for nails, screws, etc.			172.79
			Total			17452.00
			Rate for 1 cu.m.			**17452.00**
7			Priming coat for new iron work - 10 sq.m.			
	1.33	lit.	Red oxide primer	134.30	lit.	178.62
	0.70	Nos.	Painter I Class	615.00	Nos.	430.50
			Sundries for brushes etc.,		LS	2.65
			Rate for 1 sq.m.			**61.00**
			MAIN DATA			
	1.00	m^3	Clearing the scrub jungle	**4.10**	m^3	**4.10**

Sl. No.	Qty.	Unit	Description	Rate in rupees	Per	Amount in rupees
8			Earth work open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in Hard stiff clay, stiff black coton soil, hard red earth, shales, murram, gravel, stoney earth and earth mixed with small size boulders and hard gravely soil - First depth of 2 metre			
	1.00	m^3	**As per Schedule of Rate upto 2m**	**83.80**	m^3	**83.80**
9			Earth work open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in soft disintegrated rock, laterite, soft rock or kankar not requiring blasting - First depth of 2 metre			
	1.00	m^3	**As per Schedule of Rate Upto 2m.**	**129.10**	m^3	129.10
			Upto 2-4m.	**258.20**		**258.20**
			Upto 4-6m.	**387.30**		**387.30**
			Upto 6-8m.	**516.40**		**516.40**
			Upto 8-10m.	**645.50**		**645.50**
9			Open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in Medium rock and dense medium rock requring blasting - First depth of 2 metre			
	1.00	m^3	**As per Schedule of Rate Upto 2m.**	**311.60**	m^3	**311.60**
			Second Depth above 3-4m	**623.20**		**623.20**
			Third Depth above 4-6m	**934.80**		**934.80**
			Fourth Depth above 6-8m	**1246.40**		**1246.40**
			Fifth Depth above 8-10m	**1558.00**		**1558.00**
10			Open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in Medium rock and dense medium rock requiring blasting - First depth of 2 metre			
	1.00	m^3	**As per Schedule of Rate Upto 2m.**	**311.60**	m^3	**311.60**
			Fifth Depth above 8-10m	**1558.00**		**1558.00**
			Depth above 10-12m	**1869.60**		**1869.60**
			Depth above 12-14m	**2492.80**		**2492.80**
			Depth above 14-16m	**3116.00**		**3116.00**
			Depth above 16-18m	**3739.20**		**3739.20**
			Depth above 18-20m	**4362.40**		**4362.40**
11			Open well excavation complying with relevant clauses of T.N.D.S.S. Well sinking and with lead upto 10 metre in Hard granite measured in solid including blasting and stacking - First depth of 2 metre			
	1.00	m^3	**As per Schedule of Rate Upto 2m.**	**609.50**	m^3	**609.50**
			Sixth Depth above 10-12m	**3657.00**		**3657.00**
12			Plain Cement Concrete M10 using graded metal 40 : 60 of 20mm and 40 mm gauge hard broken granite stone jelly for all concrete items of works complete complying with standard specification and as directed by the departmental officers- Foundation and			
	3.60	cu.m.	Broken stone jelly 20mm	1606.34	cu.m.	5782.82
	5.40	cu.m.	Broken stone jelly 40mm	1212.34	cu.m.	6546.64
	4.50	cu.m.	Cement mortar 1:3	3786.52	cu.m.	17039.32
	1.80	Nos.	Mason II Class	718.00	Each	1292.40
	17.70	Nos.	Mazdoor I Class	502.00	Each	8885.40

Sl. No.	Qty.	Unit	Description	Rate in rupees	Per	Amount in rupees
	14.10	Nos.	Mazdoor II Class	412.00	Each	5809.20
	10.00	cu.m.	mixing charges	115.00	cu.m.	1150.00
			Total for 10 cu.m.			46505.78
			Rate for 1 cu.m.			**4650.58**
13			Centering For plane surfaces such as RCC floor slab, roof slab, beams, lintels, bed blocks, landing slab, waist slab, portico slabs and beams, etc.			
			Sub Data: 1			
			Cost of MS sheets and angles for each set:			
			Weight of MS sheets 10 gauge of size 90cm x 60cm x 3.175mm			
			3.175 x 7850 / 1000 x 0.54 =	13.46	Kg	
			Weight of MS angles of size 25cm x 25mm x 3mm:			
			3.6 x 1.1 kg / m =	4.00	Kg	
	13.46	Kg	Cost of MS sheets	41.20	Kg	554.55
	4.00	Kg	Cost of MS angles	41.20	Kg	164.80
						719.35
	LS		Add for cutting, bending, welding charges etc.		LS	70.65
			Total for one set (A)			**790.00**
			Sub Data: 2			
			Cost of MS sheets and angles and silver oak joists and casurina props for 1 sq.m.			
	19.00	Set	Cost of MS sheets and MS angles (as per A) (Adopting 40 uses)	790.00	Each	15010.04
			Total for 40 uses			15010.04
			Total for 1 use / 10 sq.m. (B)			**375.25**
	0.12	cu.m.	Cost of silver oak joists of size 10cm x 6.5cm	15500.00	cu.m.	1860.00
	98.50	RM	Cost of casurina props 10 to 13cm dia.	25.20	RM	2482.20
			Total for 5 uses			**4342.20**
			(Adopting 5 uses for silver oak / country wood joists and casurina props			4342.20
			Total for 1 use / 10 sq.m. (C)			**868.44**
			Main Data for centering for 10 sq.m.			
	10.00	sq.m.	Cost of MS sheets and angles (B)	375.25	10 Sq m	375.25
	10.00	sq.m.	Cost of silver oak joists and casurina props	868.44	10 Sq m	868.44
		LS	Add for silver planks		LS	40.00
	3.80	Nos.	Carpenter I Class	752.00	Each	2857.60
	5.40	Nos.	Mazdoor I Class	502.00	Each	2710.80
	1.00	No	Fitter II Class	660.00	Each	660.00
		LS	Add for wedges, coils, nails, etc.,		LS	50.00
		LS	For periodical cleaning and painting of MS sheets & angles (5% of cost of sheet & angle)		LS	87.91
			Total for 10 sq.m.			7650.00
						765.00

Sl. No.	Qty.	Unit	Description	Rate in rupees	Per	Amount in rupees
			Deduct rate for strutting plain surface		88.70	88.70
			(or) say, Rate for 1 sq.m. (a)			**676.30**
			Sub-Data for strutting for 10 Sq.m			
	98.50		Casurina props 10 to 13 cm dia.	25.20		2482.20
			Assuming 5 uses, Rate for 1 use			496.44
	0.3		Carpenter I Class	752.00		225.60
	0.3		Mazdoor I class	**502.00**		150.60
	LS		Add for Wedges and nails	10.00		14.36
			Total			**887.00**
			Rate for 1 Sq.m	**88.70**		
15			Supplying erection and CENTERING for sides and soffits of plain surfaces such as slab etc., using M.S. Sheets of size 90cmx60cmxBG 10 guage stiffended etc., complete complying with standard specification - **Circular centering.**			
	1.00	sq.m.	Centering for slabs beams etc., as per (a)	676.30	sq.m.	676.30
			Add 50% extra			338.15
			Total for 1 sq.m.			**1014.45**
16			Reinforced Cement Concrete M25 using 20 mm gauge hard broken granite stone jelly for all RCC items of works excluding cost of reinforcement grill and fabricating charges, centering and shuttering but including laying, vibrating with mechanical vibrators, finishing, curing, etc. and providing fixtures like fan clamps in the RCC floor / roof slabs wherever necessary and bearing surfaces of walls, beams etc. nd) and kraft paper laid over it without claiming extra, etc., complete complying with standard specification and as directed by the departmental officers- Foundation and basement.			
	9.00	cu.m.	20mm Machine Crushed Stone Jelly	1606.34	cu.m.	14457.06
	4.50	cu.m.	Sand	850.92	cu.m.	3829.14
	4033.00	kg	Cement	5876.24	MT	23698.88
	3.50	Nos.	Mason II Class	718.00	Each	2513.00
	21.20	Nos.	Mazdoor I Class	502.00	Each	10642.40
	35.30	Nos.	Mazdoor II Class	412.00	Each	14543.60
	4.50	cu.m.	Mixing Charges	115.00	cu.m.	517.50
	10.00	cu.m.	Vibration Charges	70.70	cu.m.	707.00
			Total for 10 cu.m.			70908.60
						7090.86
			Rate for 1 cu.m.			7090.86
			Rate for 1 cu.m.:			
a			0m upto 1.5m below ground level			**7090.86**
b			For Above Ground level up to 4.5m Ht	7090.86	89.90	**7180.76**
c			For 1.50m to 4.50m depth below ground level	7090.86	88.50	**7179.36**

Sl. No.	Qty.	Unit	Description	Rate in rupees	Per	Amount in rupees
17			No Fine Cement Concrete CC 1:4 using 20 mm gauge hard broken granite stone jelly for all Concrete items complete complying with standard specification and as directed by the departmental officers- Foundation and basement.			
	1620.00	kg	Cement	5876.24	MT	9519.51
	9.00	cu.m.	Broken stone 20mm.	1606.34	cu.m.	14457.06
	1.80	Nos.	Mason II Class	718.00	Each	1292.40
	17.70	Nos.	Mazdoor I Class	502.00	Each	8885.40
	14.10	Nos.	Mazdoor II Class	412.00	Each	5809.20
			Total for 10 cu.m.			39963.57
						3996.36
			Mixing Charges			115.00
			Rate for 1 cum.			**4111.00**
18			Supplying, fabricating and placing in position Mild Steel / Ribbed Tor Steel grills for all RCC works as per design given including cost of steel and G.I. binding wire in all floors etc. complete complying with standard specification. (Contractor has to make his own arrangements for the supply of steel and binding wire)			
			MS (or) RTS rods			
	1.00	Qtl	Cost of steel	45076.24	MT	4507.62
	0.01	Qtl	Binding wire	43.75	Kg	43.75
	3.50	Nos.	Fitter I Class	679.00	Each	2376.50
			Rate for 1 Quintal			**6928.00**
19			Drilling of 150 mm (6" dia) Vertical bore wells in hard rock areas to the required depth as directed by the departmental officers including labour charges for inserting casing pipes assembly in the drilled holes, if necessary grouting the casing pipe etc., including transportation charges for the rigs and supporting vehicles from one place to another place (the casing pipe has to be supplied by the contractor at the rates noted in a separate item) Rate as per TWAD BOARD SOR 2019-20 page 265 Sl.No.11a			
	1.00	Rm				
			Rate Rs:	783.18	/Rm	783.18
20			Drilling of 150 mm (6" dia) Horizontal bore wells in hard rock areas to the required depth as directed by the departmental officers including labour charges for inserting casing pipes assembly in the drilled holes, if necessary grouting the casing pipe etc., including transportation charges for the rigs and supporting vehicles from one place to another place (the casing pipe has to be supplied by the contractor at the rates noted in a separate item) Rate as per TWAD BOARD SOR 2019-20 page 265 Sl.No.11b			
	1.00	Rm				
			Rate Rs:	827.78	/Rm	827.78
21			Supplying and erection of PVC Special Blue slotted pipes for Borewells of size 140 mm dia with standard specifications.			
	1.00	Rm	As per Schedule of Rate 2020-21 Item	**406.00**		
			Rate Rs:	406.00	/Rm	406.00
22			Supplying and fixing of end cap with screws suitable to 150 mm dia PVC pipes as per standard specifications.			
	1.00	No.	As per SOR 2020-21 item No. 369(C)(c)			

Sl. No.	Qty.	Unit	Description	Rate in rupees	Per	Amount in rupees
			Rate Rs:	111.00	/No.	111.00
23			Supplying and Filling of 40mm HBS jelly including cost and conveyance of meterials to site of work with standard specifications.			
	1.00	cu.m	40mm.jelly	1212.34		1212.34
			filling charges (item no.85)	29.30		29.30
			Rate for 1 cu. M			**1241.64**
24			Supplying and fixing of chain link fencing of size 5 x 5 cm using iron wire of all size with standard specification			
	1.00	m^2	As per sheduled of rate pg.44(.item no.104)	157.20	m^2	157.20
			fixing charges	27.80		27.80
			Rate for 1 Sq. M			**185.00**
25			Supplying and Filling of river sand including cost and conveyance of meterials to site of work with standard specifications.			
	1.00	cu.m.	Cost of sand for filling	850.92	cu.m.	850.92
			filling charges	29.30		29.30
			Rate for 1 cu.m.			**880.22**
26			Supplying Mild steel grill works for windows ventilators, gates, etc., including priming coat as per standard specifications.			
	1.00	Kg	As per Schedule of Rates item 131	54.50	Kg	54.50
			Fixing Charges	17.50		17.50
			Rate for 1Kg			**72.00**
27			Supplying and erecting of weldmesh 10x10 cm 10 gauge as per standard specification.			
	1.00	Kg	As per Schedule of Rates item 126(iii)	143.00	Kg	143.00
			Fixing Charges	27.00		27.00
			Rate for 1Kg			**170.00**
28			Painting Ironwork (or) cement work in 2 coats with enamal paint including cost of paint etc.,Complete complying with standard specification.			
	2.22	Litre	Ready mixed enamel paint	223.20	Litre	495.50
	1.10	Nos.	Painter I Class	615.00	Each	676.50
		l.s	Sundries for brushes, soap, putty, etc.			8.00
			Total for 10 sq.m.			1180.00
			Rate for 1 sq.m.			**118.00**
29			Conveyance of excavated earth and blastered materials from initial lead to outside the tank with a lead of 2km including all cost as directed by the departmental officers.			
	1.00	m^3	Loading cost (38.00+38.00)	76.00	m^3	76.00
	1.00	m^3	Lead charges 2 Km	20.80	m^3	20.80
			Rate for 1 sq.m.			**96.80**
30			Supplying and fixing of MS Angles for Truss work as per standard specifications.			
	1.00	Kg	As per Schedule of Rates item 112	41.20	Kg	41.20
			Fixing Charges Sl No 167	41.60	Kg	41.60
			Rate for 1Kg			**82.80**

Sl. No.	Qty.	Unit	Description	Rate in rupees	Per	Amount in rupees
31			Hire charges for Diesel pump sets 3HP TO 7.50 HP for bailing out water for foundations including the cost of fuel crew and transportation charges etc., complete complying with standard specification and as directed by the Departmental Officers.			
						333.89
			Rate for per hour = Rs		333.89	

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Thyiyagai Tank - Rate of RCC including Centering

S.No.	Description	Qty	Rate	Per	Amount
1	**Above GL**				
	Quantity of RCC(As per Detailed)	48	7180.76	m^3	344676
	Circular Centering				
	Inner Wall both sides	233.62	1014.45	m^2	236996
	Plain centering				
	Fencing post	19.44			
	Steps	5.4			
	Steps Alround	6.3			
		31.14	676.30	m^2	21060
				Total Amt.	**602732**
	Rate of concrete including Centering	**602732 / 48**	**12556.92**	**m^3**	
2	**0 m to 1.5 m Below GL**				
	Quantity of RCC(As per Detailed)	25	7090.86	m^3	177272
	Circular Centering				
	Inner Wall both sides (1x2x3.14x12.4x1.5)	116.8	1014.45	m^2	118488
	Plain centering	-	-	-	-
				Total Amt.	**295760**
	Rate of concrete including Centering	**295760 / 25**	**11830.4**	**m^3**	
3	**1.5 m to 4.5 m Below GL**				
	Quantity of RCC(As per Detailed)	77	7179.36	m^3	552811
	Circular Centering				
	Inner Wall both sides (1x2x3.14x12.4x1)	77.87			
	Inner Wall Footing	38.94			
	Well beam	52.12			
		168.93	1014.45	m^2	171371
	Plain centering				
	Retaining Wall Base	3.2			
	Retaining Wall	28.8			
		32	676.30	m^2	21642
					745824
	Rate of concrete including Centering	**745824 / 77**	**9686.03**	**m^3**	
4	**No fine Concrete**				
	Quantity of Concrete (As per Detailed)	2	4111.00	m^3	8222
	Circular Centering				
	Plain centering				
	No fine Concrete	8.64	676.30	m^2	5843
					14065
	Rate of concrete including Centering	**14065 / 2**	**7032.5**	**m^3**	

31/8/12

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3/9/12

Assistant Executive Engineer, P.W.D., (I/c)
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31/8/12

Executive Engineer, PWD
Ground Water Division
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CONSTRUCTION OF ARTIFICIAL RECHARGE WELL STRUCTURES 3No's IN MANIMUKTHA SUBBASIN (TANKS–CHITTALUR, KUDIYANALLUR AND THYIYAGAI) OF KALLAKURICHI DISTRICT UNDER GROUND WATER COMPONENT									
DETAILED ESTIMATE FOR THYIYAGAI									
SL. No	**DESCRIPTION OF ITEMS**	**NO**				**L**	**B**	**D**	**QTY**
1	Clearing Scrub jungle	1	x	1		50.00	50.00		2500.00
2	Earth work open well excavation complying with relevant clauses and with lead upto 10 meter in Hard stiff clay, stiff black cotton soil, hard red earth, shales, murram, gravel, stoney earth and earth mixed with small size boulders and hard gravely soil first depth of 2 meters.								
	RCC wall for well	1	x	1	3.14/4	14.20	14.20	1.00	158.29
	Add extra								1.71
	Total								**160.00** M^3
3	Earth work open well excavation complying with relevant clauses and with lead upto 10 meters in soft disintegrated rock, laterite, soft rock or kankar not requiring blasting - Second depth 2.0 to 4.0m								
	RCC wall for well	1	x	1	3.14/4	14.20	14.20	1.00	158.29
	RCC wall foundation	1	x	1	3.14	12.40	2.00	0.60	46.72
	Add extra								4.99
	Total								**210.00** M^3
4	Earth work open well excavation complying with relevant clauses and with lead upto 10 m in medium rock and dense medium rock requiring blasting.								
	Open well (2.00m-4.00m)	1	x	1	3.14/4	8.00	8.00	2.00	100.48 M^3
	Add extra								0.52
									101.00 M^3
	Open well (4.00m-6.00m)	1	x	1	3.14/4	8.00	8.00	2.00	100.48 M^3
	Add extra								0.52
									101.00 M^3
	Open well (6.00m-	1	x	1	3.14/4	8.00	8.00	2.00	100.48 M^3
	Add extra								0.52
									101.00 M^3
	Open well (8.00m-10.00m)	1	x	1	3.14/4	8.00	8.00	2.00	100.48 M^3
	Add extra								0.52
									101.00 M^3
	Open well (10.00m-12.00m)	1	x	1	3.14/4	8.00	8.00	2.00	100.48 M^3
	Add extra								0.52
									101.00 M^3

5	Plain Cement Concrete M10 using graded metal 40 : 60 of 20mm and 40 mm gauge hard broken granite stone jelly for all concrete items of works complete complying with standard specification and as directed by the departmental officers- Foundation and basement.								
	RCC Wall Foundation	1	x	1	3.14	12.40	2.00	0.10	7.79
	Berm	1	x	1	3.14	10.30	1.70	(0.35+0.20) /2	15.12
	Ret . Wall	1	x	1		4.00	2.00	0.15	1.20
	Add Extra								0.89
	Total								**25.00** M^2
6	Supplying erection and CENTERING for sides and soffits of plain surfaces such as slab etc., using M.S. Sheets of size 90cmx60cmxBG 10 guage stiffended etc., complete complying with standard specification - Circular centering.								
	Below Ground Level								
	RCC wall footing	1	x	2	3.14	12.40		0.50	38.94
	RCC wall both sides	1	x	2	3.14	12.40		2.50	194.68
	Grade beam	1	x	2	3.14	8.30		1.00	52.12
	Add extra								4.26
	Total								**290.00** M^2
	Above Ground Level								
	RCC wall both sides	1	x	2	3.14	12.40		3.00	233.62
	Add extra								6.38
	Total								**240.00** M^2
7	Supplying erection and CENTERING for sides and soffits of plain surfaces such as slab etc., using M.S. Sheets of size 90cmx60cmxBG 10 guage stiffended etc., complete complying with standard specification -Foundation and basement centering.								
	Fencing Post	1	x	4	27	1.20	-	0.15	19.44
	No fine concrete	1	x	1	4	1.80	-	1.20	8.64
	steps	1	x	1	20	0.90	0.30	-	5.40
	Steps sides alround	1	x	1	20	2.10		0.15	6.30
	Ret Wall base	1	x	2		4.00	0.40	-	3.20
	Ret Wall	1	x	2		4.00	-	3.60	28.80
	Add Extra								0.22
	Total								**72.00** M^2

8	Reinforced Cement Concrete M25 using 20 mm gauge hard broken granite stone jelly for all RCC items of works excluding cost of reinforcement grill and fabricating charges, centering and shuttering but including laying, vibrating with mechanical vibrators, finishing, curing, etc. and providing fixtures like fan clamps in the RCC floor / roof slabs wherever necessary and bearing surfaces of walls, beams etc. and kraft paper laid over it without claiming extra, etc., complete complying with standard specification and as directed by the departmental officers-								
(a)	**Above GL**								
	Fencing Post	1	x	1	27	0.15	0.15	1.20	0.73
	RCC wall	1	x	1	3.14	12.40	0.40	3.00	46.72
	Deduction for porous concrete	1	x	54	3.14/4	0.15	0.15	0.40	-0.38
	steps	1	x	14		0.90	0.30	0.15	0.57
	Add Extra								0.36
	Total								**48.00** M^3
(b)	**0m to 1.5m below GL**								
	RCC wall	1	x	1	3.14	12.40	0.40	1.50	23.36
	steps	1	x	3		0.90	0.30	0.15	0.12
	Add Extra								1.52
	Total								**25.00** M^3
(c)	**1.5m to 4.5m below GL**								
	RCC wall base	1	x	1	3.14	12.40	1.80	0.20	14.02
	RCC wall base slope	1	x	1	3.14	12.40	(1.80+0.60)/2	0.30	14.02
	RCC wall base pedestal	1	x	1	3.14	12.40	0.60	0.50	11.68
	RCC Vertical wall	1	x	1	3.14	12.40	0.40	1.00	15.57
	steps	1	x	3		0.90	0.30	0.15	0.12
	Grade beam	1	x	1	3.14	8.30	0.30	1.00	7.81
	Ret.wall base	1	x	1		4.00	2.00	0.40	3.20
	Ret.wall	1	x	1		4.00	(0.6+0.45)/2	3.60	7.56
	Add Extra								3.02
	Total								**77.00** M^3
9	No Fine Cement Concrete CC 1:4 using 20 mm gauge hard broken granite stone jelly for all concrete items of works. complete complying with standard specification and as directed by the departmental officers- Foundation and basement.								
	For Vertical bore hole	1	x	4		0.45	0.45	1.20	0.97
	RCC wall no fine concrete	1	x	54	3.14/4	0.15	0.15	0.40	0.38
	Add Extra								0.65
	Total								**2.00** M^3

10	Supplying, fabricating and placing in position Mild Steel / Ribbed Tor Steel grills for all RCC works as per design given including cost of steel and G.I. binding wire in all floors etc. complete complying with standard specification. (Contractor has to make his own arrangements for the supply of steel and binding wire)								
	Quantity for Grade beam and Pedestal	1	x		1	51.05	70.00	-	3573.50
	Quantity for Vertical wall	1	x		1	93.95	75.00	-	7046.25
	Add extra for overlaps, joints etc.,								180.25
									10800.00 Kg
	Total								**108.00** Qtl
11	Drilling of 150 mm bore wells in hard rock areas to the required depth as directed by the departmental officers including labour charges for inserting casing pipes assembly in the drilled holes, if necessary grouting the casing pipe etc., including transportation charges for the rigs and supporting vehicles from one place to another place (the casing pipe has to be supplied by the contractor at the rates noted in a separate item) Rate as per TWAD BOARD SOR								
	Inside Open well(Vertical)	1	x		4	-	-	25.00	**100.00** RM
	Inside Open well(Horizontal)	1	x		4	-	-	30.00	**120.00** RM
12	Supplying and erection of PVC Special Blue slotted pipes for Borewells of size 140 mm dia with standard specifications.								
	For Vertical & horizontal Bore	1	x		8	-	-	2.00	**16.00** RM
	RCC wall no fine concrete	1	x	54				0.40	**21.60 RM**
								Total	**37.60 RM**
13	Supplying and Fixing of PVC End cap of size 150 mm dia,6 Kg best approved quality with ISI mark complete complying with standard specifications.								
	For Vertical Bore	1	x		4	-	-		**4.00** No's
14	Supplying and Filling of 40mm HBS jelly including cost and conveyance of materials to site of work with standard specifications.								
	Inside Open well	1	x		3.14/4	8.00	8.00	0.50	25.12
	Deduction for vertical borehole								-0.97
	Add Extra								0.85
									25.00 M^3

15	Supplying and Filling of river sand including cost and conveyance of materials to site of work with standard specifications.								
	Inside Open well	1	x		3.14/4	8.00	8.00	0.50	25.12
	Deduction for vertical borehole								-0.97
	Add Extra								0.85
									25.00 M^3
16	Supplying and fixing of chain link fencing								
	For open well	1	x	1	3.14	12.40	-	0.90	**35.04** M^2
	Deduction for Gate	1	x	1		0.90	-	1.20	**1.08** M^2
	Add Extra								0.04
									34.00 M^2
17	Supplying and Fixing MS Grill Gate								
	For Provision Gate	1	x	1		0.90	-	1.20	**1.08** M^2
	For $1m^2$ for 30Kg								**32.00** Kg
18	Conveyance of excavated earth and blasted materials from initial lead to outside the tank with a lead of 2km including all cost as directed by the departmental officers.								
	Quantity vide items 2,3,4								875.00 M^3
	Add Extra								5.00
	Total								**880.00**
19	Dewatering with diesel engine and pump during excavation of soils and during construction of artificial recharge structures Cost VIDE TWAD BOARD schedule of rates								
		1	x	1			100.00	10 Hrs/day	**1000.00** Hrs
	Total								**1000.00**
20	Supplying Mild steel grill works for , including priming coat as per standard specifications.								
	Open Well Covering	1	x	1	$\frac{3.14}{4}$	8.60	-	8.60	58.06
	Add Extra								1.94
									60.00
	At the rate of 25 Kg per M^2	1	x	1	1	60.00	25.00		**1500.00** Kg
21	Supplying and fixing of MS Angle for Truss work								
	Truss and Purlis (As per Calculation Sheet)								**1960.00** Kg
	Add Extra								**0.00** Kg
									1960.00 Kg

22	Supplying and erecting of Weld mesh 10 x 10 cm 10 gauge as per standard Specifications.								
	For Open Well	1	x	1	3.14/4	8.60	-	8.60	58.06
	Add Extra								1.94
									60.00
23	Painting Ironwork (or) cement work in 2 coats with enamal paint including cost of paint etc.,Complete complying with standard specification.								
	Grill & Weld Mesh	1	x	3	3.14/4	8.60	-	8.60	174.18
	Add Extra								5.82
									180.00

31/07/12

Assistant Engineer, P.W.D
Ground water section
Neyveli.

31/7/12 (I/c)

Assistant Executive Engineer, P.W.D
Ground Water Sub Division
Neyveli

CONSTRUCTION OF ARTIFICIAL RECHARGE WELL STRUCTURES 3No's IN MANIMUKTHA SUBBASIN (TANKS–CHITTALUR, KUDIYANALLUR AND THYIYAGAI) OF KALLAKURICHI DISTRICT UNDER GROUND WATER COMPONENT Thyiyagai Tank						
ABSTRACT ESTIMATE						
Sl. No.	**Qty**	**Unit**	**Description**	**Rate**	**Per**	**Amount**
1	2500.00	M2	Clearing Scrub jungle	4.10	M2	10250
2			Earth work open well excavation complying with relevant clauses and with lead upto 10 meter in Hard stiff clay, stiff black cotton soil, hard red earth, shales, murram, gravel, stoney earth and earth mixed with small size boulders and hard gravely soil first depth of 2 meters			
	160.0	M^3	First Depth of 0-2 m	83.80	M^3	13408
3			Earth work open well excavation complying with relevant clauses and with lead upto 10 meters in soft disintegrated rock, laterite, soft rock or kankar not requiring blasting - Second depth			
	210.0	M^3	Second Depth 2.00 to 4.00m	258.20	M^3	54222
4			Earth work open well excavation complying with relevant clauses and with lead upto 10 m in medium rock and dense medium rock requiring blasting.			
	101.00	M^3	Second Depth 2.00 to 4.00 m	623.20	M^3	62943
	101.00	M^3	Third Depth 4.00 to 6.00 m	934.80	M^3	94415
	101.00	M^3	Fourth Depth 6.00 to 8.00 m	1246.40	M^3	125886
	101.00	M^3	Fifth Depth 8.00 to 10.00 m	1558.00	M^3	157358
	101.00	M^3	Sixth Depth 10.00 to 12.00 m	1869.60	M^3	188830
5	25.00	M^3	Plain Cement Concrete M10 using graded metal 40 : 60 of 20mm and 40 mm gauge hard broken granite stone jelly for all concrete items of works complete complying with standard specification and as directed by the departmental officers- Foundation and basement.	4650.58	M^3	116264

6			Reinforced Cement Concrete M25 using 20 mm gauge hard broken granite stone jelly for all RCC items of works excluding cost of reinforcement grill and fabricating charges, centering and shuttering but including laying, vibrating with mechanical vibrators, finishing, curing, etc. and providing fixtures like fan clamps in the RCC floor / roof slabs wherever necessary and bearing surfaces of walls, beams etc. shall be finished smooth with Cement Mortar 1:3 (One Cement and Three Sand) and kraft paper laid over it without claiming extra, etc., complete complying with standard specification and as directed by the departmental officers- Foundation and basement (Including			
	48.00	M^3	Above ground level	12556.92	M^3	602732
	25.00	M^3	o m to 1.5m below GL	11830.40	M^3	295760
	77.00	M^3	1.5m to 4.5m Depth below GL	9686.03	M^3	745824
7	2.00	M^3	No Fine Cement Concrete CC 1:4 using 20 mm gauge hard broken granite stone jelly for all Concrete items complete complying with standard specification and as directed by the departmental officers- Foundation and basement.(Including Centering)	7032.50	M^3	14065
8	108.00	Qtl	Supplying, fabricating and placing in position Mild Steel / Ribbed Tor Steel grills for all RCC works as per design given including cost of steel and G.I. binding wire in all floors etc. complete complying with standard specification. (Contractor has to make his own arrangements for the supply of steel and binding wire)	6928.00	Qtl	748224
9	100.00	RM	(a) Drilling of 150 mm dia Vertical bore wells in hard rock areas to the required depth as directed by the departmental officers including labour charges for inserting casing pipes assembly in the drilled holes, if necessary grouting the casing pipe etc., including transportation charges for the rigs and supporting vehicles from one place to another place (the casing pipe has to be supplied by the contractor at the rates noted in a separate item) Rate as per TWAD BOARD SOR.	783.18	RM	78318
10	120.00	RM	(b) Drilling of 150 mm (6" dia) Horizontal bore wells (Rate as per TWAD BOARD SOR.)	827.78	RM	99334
11	37.60	RM	Supplying and erection of PVC Special Blue slotted pipes for Borewells of size 140 mm dia with standard specifications.	406.00	RM	15266

12	4.00	No	Supplying and Fixing of PVC End cap of size 150 mm dia,6 Kg best approved quality with ISI mark complete complying with standard specifications.	111.00	No	444
13	25.00	M^3	Supplying and Filling of 40mm HBS jelly including cost and conveyance of meterials to site of work with standard specifications.	1241.64	M^3	31041
14	25.00	M^3	Supplying and Filling of river sand including cost and conveyance of meterials to site of work with standard specifications.	880.22	M^3	22006
15	34.00	M^2	Supplying and fixing of chain link fencing	185.00	M^2	6290
16	32.00	M^2	Supplying and fixing of Mild steel grill gate for chain link fencing	72.00	M^2	2304
17	880.00	M^3	Connveyance of excavated earth and blastered materials from initial lead to outside the tank with a lead of 2km including all cost as directed by the departmental officers.	96.80	M^3	85184
18	1000.00	Hrs	Dewatering with diesel engine and pump during excavation of soils and during construction of artificail recharge structures Cost VIDE TWAD BOARD schedule of rates	333.89	Hrs	333890
19	1500.00	Kg	Supplying Mild steel grill works for , including priming coat as per standard specifications.	72.00	Kg	108000
20	1960.00	Kg	Supplying and fixing of MS Angle for Truss work	82.80	Kg	162288
21	60.00	m^2	Supplying and erecting of Weld mesh 10 x 10 cm 10 gauge as per standard Specifications.	170.00	m^2	10200
22	180.00	m^2	Painting Ironwork (or) cement work in 2 coats with enamal paint including cost of paint etc.,Complete complying with standard specification.	118.00	m^2	21240
					Total	**4205986**

Assistant Engineer, P.W.D.
Ground water section
Neyveli.

Assistant Executive Engineer, P.W.D. (I/c)
Ground Water Sub Division
Neyveli

Executive Engineer, PWD
Ground Water Division
Cuddalore 607 001

HYDRAULIC PARTICULARS

	NAME OF TANK		:	**Chittalur Tank**
	Maintained by(PWD/Panchayat union)		:	PWD
1)	Name of District		:	Kallakurichi
2)	Name of Taluk		:	Kallakurichi
3)	Name of Block		:	Thiyagadurugam
4)	Name of			
	a) Village		:	Chittalur
	b) Basin & Sub Basin		:	Vellar & Manimuktha
5)	Latitude : 11°42'01"	Longitude	:	79°4'45"
6)	Registered Ayacut		:	155.79 Ha.
7)	Whether tank was standardized		:	yes
8)	Catchment	a) Free	:	4.53 Sq. km
9)	Capacity of the Tank Mcu.m		:	0.32 Mcu.m
	Capacity of the Tank at F.T.L.			96.32 m
10)	a) Type of Tank		:	Non-System
	b) Present status of tank		:	Functioning
11)	Details of supply Channel			
	a)Length			3300 m

12) Standards of Tank

Area of water spread	:	34	Ha.
Depth of Storage	:	2.8	m

13) **Bund**

a) Length : 1800 m

HYDRAULIC PARTICULARS

	NAME OF TANK	:	**KudiyanallurTank**	
	Maintained by(PWD/Panchayat union)	:	PWD	
1)	Name of District	:	Kallakurichi	
2)	Name of Taluk	:	Kallakurichi	
3)	Name of Block	:	Thiyagadurugam	
4)	Name of			
	a) Village	:	Kudiyanallur	
	b) Basin & Sub Basin	:	Vellar & Manimuktha	
5)	Latitude : 11°40'07" Longitude	:	79°7'60"	
6)	Registered Ayacut	:	55.71	Ha.
7)	Whether tank was standardized	:	yes	
8)	Catchment a) Free	:	4.27	Sq. km
9)	Capacity of the Tank Mcu.m	:	0.33	Mcu.m
	Capacity of the Tank at F.T.L.		88.39 m	
10)	a) Type of Tank	:	Non-System	
	b) Present status of tank	:	Functioning	
11)	Details of supply Channel a)Length		1000 m	

12) Standards of Tank

Area of water spread	:	35	Ha.
Depth of Storage	:	2.8	m

13) **Bund**

a) Length : 1400 m

HYDRAULIC PARTICULARS

	NAME OF TANK		:	**Thyiyagai Tank**
	Maintained by(PWD/Panchayat union)		:	PWD
1)	Name of District		:	Kallakurichi
2)	Name of Taluk		:	Kallakurichi
3)	Name of Block		:	Thiyagadurugam
4)	Name of			
	a) Village		:	Thyiyagai
	b) Basin & Sub Basin		:	Vellar & Manimuktha
5)	Latitude : 11°42'24"	Longitude	:	79°06'00"
6)	Registered Ayacut		:	54.05 Ha.
7)	Whether tank was standardized		:	yes
8)	Catchment a) Free		:	22.21 Sq. km
9)	Capacity of the Tank Mcu		:	0.18 Mcu.m
	Capacity of the Tank at F.T.L.			97.54 m
10)	a) Type of Tank		:	Non-System
	b) Present status of tank		:	Functioning
11)	Details of supply Channel a)Length			1300 m

12) Standards of Tank

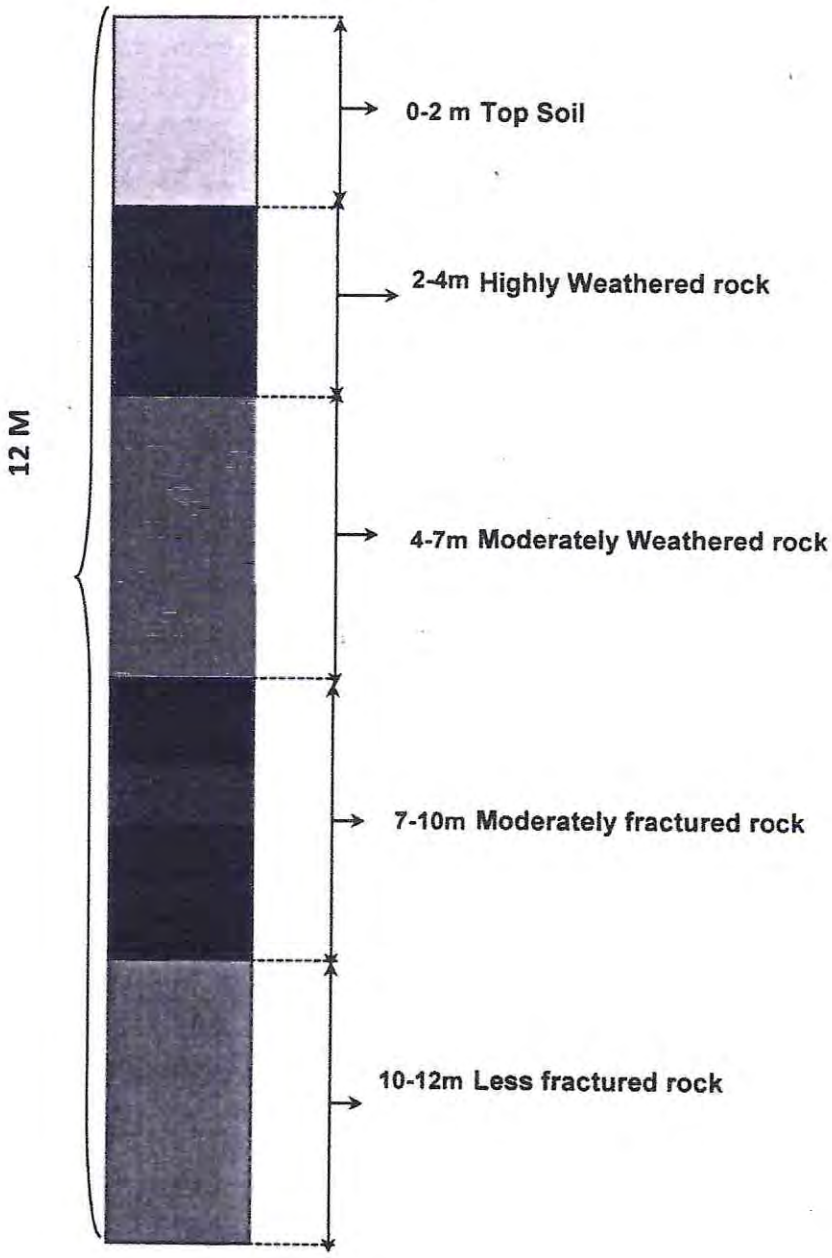
Area of water spread	:	26	Ha.
Depth of Storage	:	2.1	m

13) **Bund**

a) Length : 1100 m

CHITTALUR TANK

LITHOLOGY DETAILS

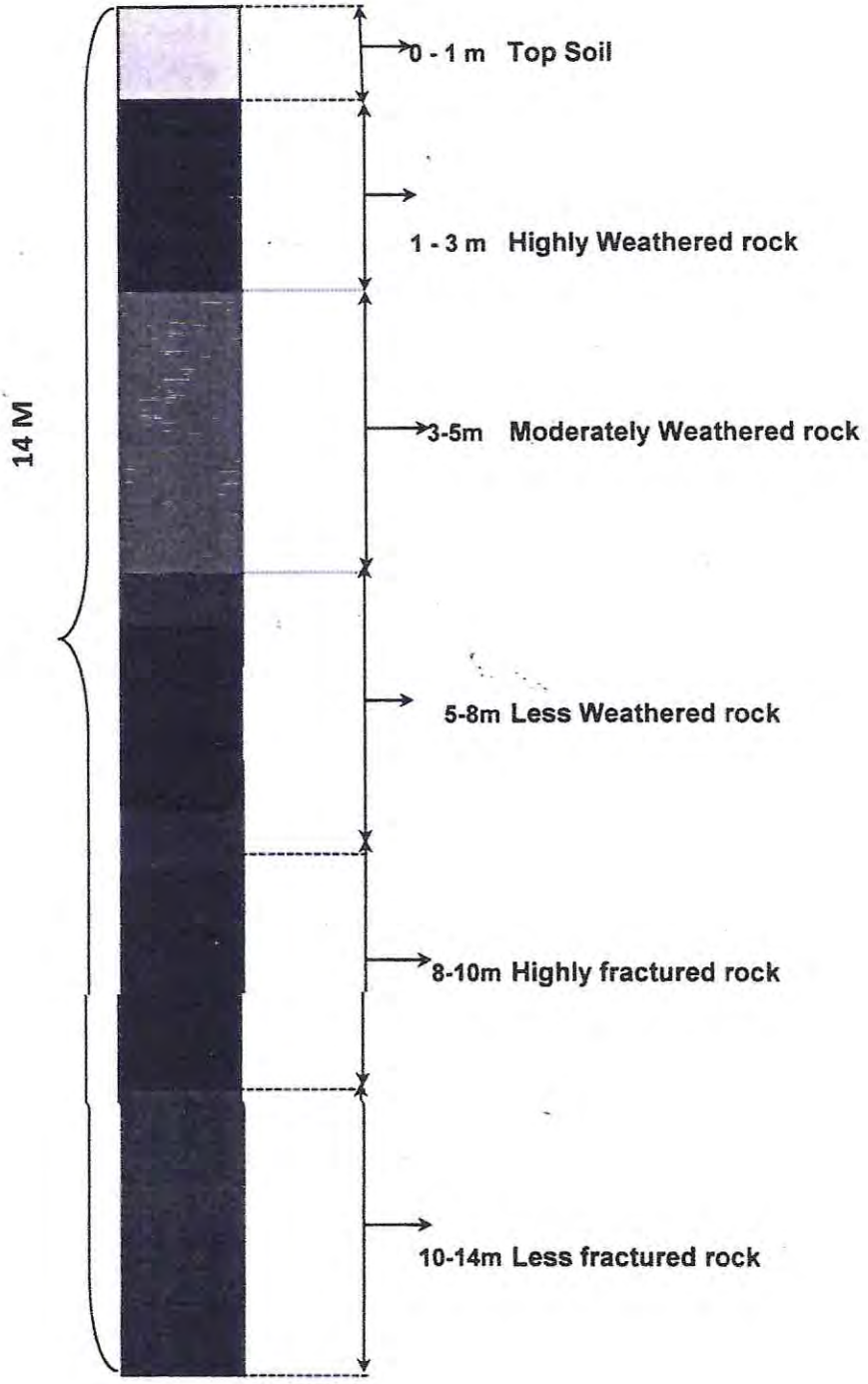


Assistant Engineer,P.W.D.,
Ground Water Section
Neyveli

Assistant Executive Engineer,P.W.D.,(I/c)
Ground Water Sub Division
Neyveli.

KUDIAYANALLUR TANK

LITHOLOGY DETAILS



31/07/12

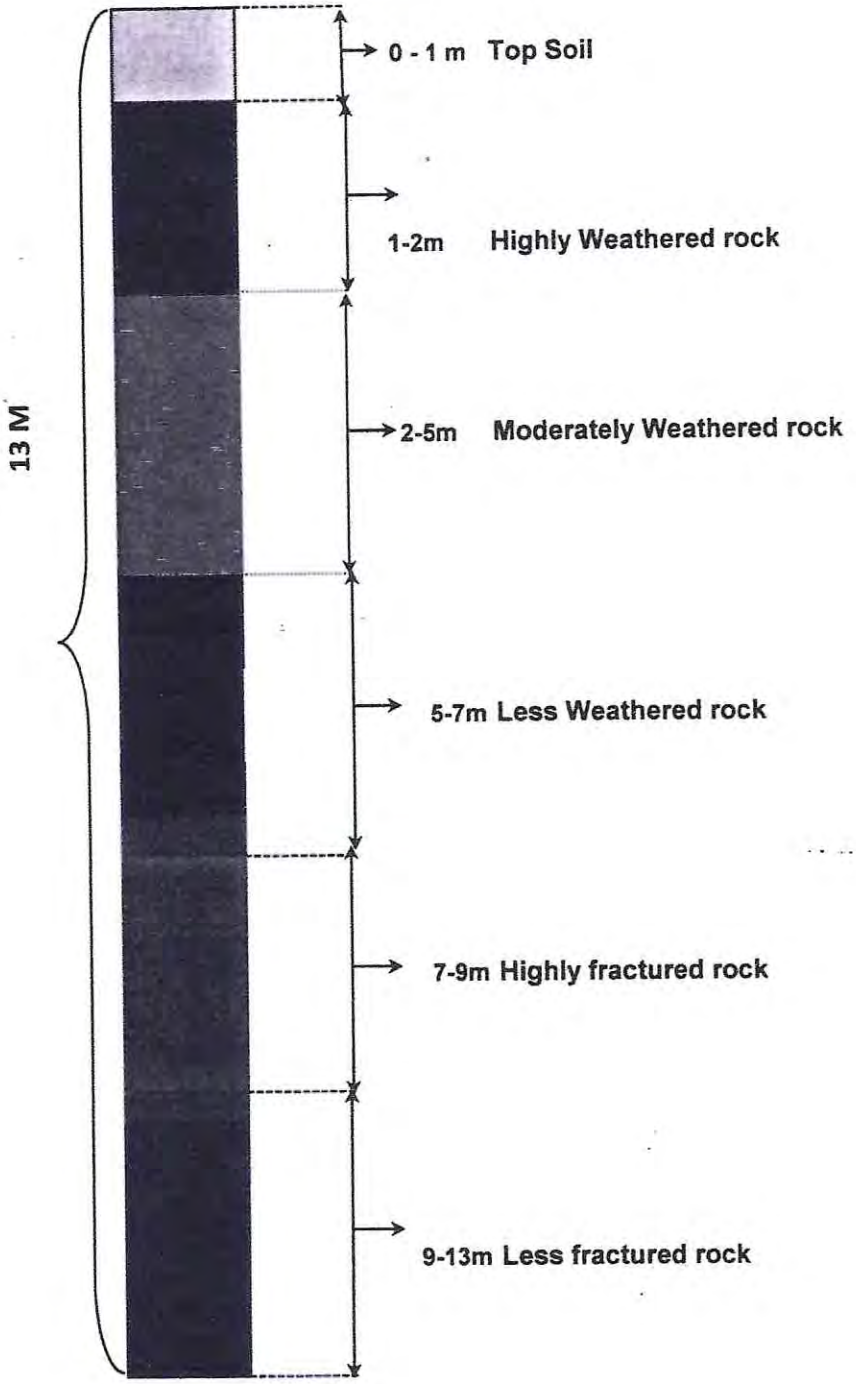
Assistant Engineer,P.W.D.,
Ground Water Section
Neyveli

31/7/2012

Assistant Execuive Engineer,P.W.D.(T/C)
Ground Water Sub Division
Neyveli.

THIYAGAI TANK

LITHOLOGY DETAILS



31/12/21

Assistant Engineer,P.W.D.,
Ground Water Section
Neyveli

31/12/21

Assistant Executive Engineer,P.W.D.(I/c)
Ground Water Sub Division
Neyveli.

From,

K.Anandharaj M.Sc.,M.Tech.,

Assistant Director (G)

Ground Water (Geo) Sub Division

PWD, Villupuram Dt.

To,

The Assistant Executive Engineer i/c.,

Ground Water Sub Division, PWD

Neyveli - 1

Lr.No : ~~282~~ 142 AD (G)/GW(G)SD/VPM/2020/Dt: 30.07.2020

Sir/Madam,

Sub: TNIAMP Phase III-Preparing Estimates- Lithology details - Reg.

Ref : Assistant Executive Engineer,GWSD,Neyveli Lr.No.2/F-/TNIAMP P III/AEE/Ney/2020-21/Dt 28.07.2020

With reference to the above letter, the available lithology details in geological sub division are given hereunder.

Chittalur Village:

0 – 02 mt	Top Soil
02 – 04 mt	Highly Weathered rock
04 – 07 mt	Moderately weathered rock
07 – 10 mt	Moderately fractured rock
10 – 13 mt	Less fractured rock

Thiyagai Village :

0 – 01 mt	Top Soil
01 – 02 mt	Highly weathered rock
02 – 05 mt	Moderately weathered rock
05 – 07 mt	Less weathered rock
07 – 09 mt	Highly fractured rock
09 – 12 mt	Less fractured rock

Kudiayanallur Village:

0 – 01 mt	Top Soil
01 – 03 mt	Highly weathered rock
03 – 05 mt	Moderately weathered rock
05 – 08 mt	Less weathered rock
08 – 10 mt	Highly fractured rock
10 – 14 mt	Less fractured rock

Note: Geophysical survey should be conducted to identify the exact lithology of the referred tank in the site area before execution of work.

Assistant Director (G)

Ground Water (Geo) Sub Division

PWD, Villupuram

Copy : Submitted to the Executive Engineer, GWD, Cuddalore for information.

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WEIGHTED AVERAGE STATEMENT

Sl. No.	Description of item	Unit	Tank 1 Chittalur			Tank 2 Kudiyanallur			Tank 3 Thyiyagai			Total Qty	Total Amount Rs.	Weighted Average Rate Rs.
			Qty	Rate	Amount	Qty	Rate	Amount	Qty	Rate	Amount			
1	Clearing Scrub jungle	m^2	2500.00	4.10	10250	2500.00	4.10	10250	2500.00	4.10	10250	7500	30750	4.10
2	Earth work open well excavation complying with relevant clauses of T.N.D.S.S. well sinking and with lead upto 10 meter in Hard stiff clay, stiff black cotton soil, hard red earth, shales, murram, gravel, stoney earth and earth mixed with small size boulders and hard gravely soil first depth of 2 meters.													
	First Depth of 0-2 m	m^3	317.00	83.80	26565	160.00	83.80	13408	160.00	83.80	13408	637	53381	83.80
3	Earth work open well excavation complying with relevant clauses of T.N.D.S.S. well sinking and with lead upto 10 meters in soft disintegrated rock, laterite, soft rock or kankar not requiring blasting - Second depth													
	Second Depth 2.00 to 4.00m	m^3	256.00	258.20	66099	364.00	258.20	93985	210.00	258.20	54222	830	214306	258.20
4	Earth work open well excavation complying with relevant clauses of T.N.D.S.S. well sinking and with lead upto 10 m in medium rock and dense medium rock not requiring blasting.													
	Second Depth 2.00 to 4.00 m	m^3				51.00	623.20	31783	101.00	623.20	62943	152	94726	623.20
	Third Depth 4.00 to 6.00 m	m^3	101.00	934.80	94415	101.00	934.80	94415	101.00	934.80	94415	303	283245	934.80
	Fourth Depth 6.00 to 8.00 m	m^3	101.00	1246.40	125886	101.00	1246.40	125886	101.00	1246.40	125886	303	377658	1246.40
	Fifth Depth 8.00 to 10.00 m	m^3	101.00	1558.00	157358	101.00	1558.00	157358	101.00	1558.00	157358	303	472074	1558.00
	Sixth Depth 10.00 to 12.00 m	m^3	101.00	1869.60	188830	101.00	1869.60	188830	101.00	1869.60	188830	303	566490	1869.60
5	Plain Cement Concrete M10 using graded metal 40 : 60 of 20mm and 40 mm gauge hard broken granite stone jelly for all concrete items of works complete complying with standard specification and as directed by the departmental officers-Foundation and basement.	m^3	25.00	4650.97	116274	25.00	4623.28	115582	25.00	4650.58	116264	75	348120	4641.60

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No.													Rs.
			Qty	Rate	Amount	Qty	Rate	Amount	Qty	Rate	Amount			
6	Providing and placing Reinforced Cement Concrete M25 grade (Including Centering)													
	Qty of concrete above Ground level	m^3	48.00	12552.79	602534	48.00	12527.54	601322	48.00	12556.92	602732	144	1806588	12545.75
	Qty of concrete 0-1.50 m	m^3	25.00	11826.24	295656	25.00	11801.00	295025	25.00	11830.40	295760	75	886441	11819.21
	Qty of concrete 1.50 -4.50 m	m^3	77.00	9681.88	745505	77.00	9656.64	743561	77.00	9686.03	745824	231	2234890	9674.85
7	Providing and placing No fine Concrete C.C 1 : 4 (Including Centering)													
	Above Ground level	m^3	2.00	7015.50	14031	2.00	6993.50	13987	2.00	7032.50	14065	6	42083	7013.83
8	Supplying , fabricating and placing in position Mild steel / Ribbed Tor steel grill for all RCC works	Qtl	108.00	6925.00	747900	108.00	6927.00	748116	108.00	6928.00	748224	324	2244240	6926.67
9	(a) Drilling of 150 mm dia Vertical bore wells in hard rock areas to the required depth Rate as per TWAD BOARD SOR.	Rm	100.00	783.18	78318	100.00	783.18	78318	100.00	783.18	78318	300	234954	783.18
	(b) Drilling of 150 mm (6" dia) Horizontal bore wells (Rate as per TWAD BOARD SOR.)	Rm	120.00	827.78	99334	120.00	827.78	99334	120.00	827.78	99334	360	298002	827.78
10	Supplying and erection of PVC Special Blue slotted pipes for Borewells of size 140 mm dia with standard specifications.	No	37.60	406.00	15266	37.60	406.00	15266	37.60	406.00	15266	113	45798	406.00
11	Supplying and Fixing of PVC End cap of size 150 mm dia,6 Kg best approved quality with ISI mark complete complying with standard specifications.	No	4.00	111.00	444	4.00	111.00	444	4.00	111.00	444	12	1332	111.00
12	Supply and filling of 40 mm HBS Jelly including cost and conveyance of materials to site of work as per standard specifications.	m^3	25.00	1226.30	30658	25.00	1199.60	29990	25.00	1241.64	31041	75	91689	1222.52
13	Supplying and filling with sand in layers of not more than 15 cm thick	m^3	25.00	923.36	23084	25.00	908.98	22725	25.00	880.22	22006	75	67815	904.20
14	Supplying and fixing of chain link fencing	m^2	34.00	185.00	6290	34.00	185.00	6290	34.00	185.00	6290	102	18870	185.00
15	Supplying and fixing of Mild steel grill gate for chain link fencing	Kg	32.00	72.00	2304	32.00	72.00	2304	32.00	72.00	2304	96	6912	72.00
16	Conveyance of excavated earth from the work site to outside of tank with a lead of 2 Km including all labour charges as directed by the Departmental officers complying with standard specification	m^3	980.00	96.80	94864	980.00	96.80	94864	880.00	96.80	85184	2840	274912	96.80

Sl. No.	Description of item	Unit	Chittalur			Kudiyanallur			Thyiyagai			Total Qty	Total Amount Rs.	Average Rate Rs.
			Qty	Rate	Amount	Qty	Rate	Amount	Qty	Rate	Amount			
17	Dewatering with diesel engine and pumpset above 3 HP to 7.5 HP during excavation of soil and during construcion of recharge well structure cast vide TWAD board Schedule of Rates	1 Hr.	1000.00	333.89	333890	1000.00	333.89	333890	1000.00	333.89	333890	3000	1001670	333.89
18	Supplying Mild steel grill works for , including priming coat as per standard specifications.	1 Kg.	1500.00	72.00	108000	1500.00	72.00	108000	1500.00	72.00	108000	4500	324000	72.00
19	Supplying and fixing of MS Angle for Truss work	1 Kg.	1960.00	82.80	162288	1960.00	82.80	162288	1960.00	82.80	162288	5880	486864	82.80
20	Supplying and erecting of Weld mesh 10 x 10 cm 10 gauge as per standard Specifications.	m2	60.00	170.00	10200	60.00	170.00	10200	60.00	170.00	10200	180	30600	170.00
21	Painting the Iron work (or) Cement work in two coats with enamal paint including cost of paint etc.,Complete complying with standard specification.	m^2	180.00	118.00	21240	180.00	118.00	21240	180.00	118.00	21240	540	63720	118.00
	Total Civil Cost				**4177483**			**4218661**			**4205986**		**12602130**	

Asssitant Engineer,PWD,WRD.,
Ground Water Section,
Neyveli.

Asssitant Executive Engineer,PWD,WRD.(I/C)
Ground Water Sub Division,
Neyveli

Executive Engineer,PWD,WRD.,
Ground Water Division,
Cuddalore.

Construction of 3 Nos of Artificial Recharge Well Structures in Manimuktha Sub Basin of Kallakurichi District

BILL OF QUANTITIES

Sl. No.	Description of item	Unit	Total Qty
1	Clearing Scrub jungle	m^2	7500
2	Earth work open well excavation complying with relevant clauses of T.N.D.S.S. well sinking and with lead upto 10 meter in Hard stiff clay, stiff black cotton soil, hard red earth, shales, murram, gravel, stoney earth and earth mixed with small size boulders and hard gravely soil first depth of 2 meters.		
	First Depth of 0-2 m	m^3	637
3	Earth work open well excavation complying with relevant clauses of T.N.D.S.S. well sinking and with lead upto 10 meters in soft disintegrated rock, laterite, soft rock or kankar not requiring blasting - Second depth		
	Second Depth 2.00 to 4.00m	m^3	830
4	Earth work open well excavation complying with relevant clauses of T.N.D.S.S. well sinking and with lead upto 10 m in medium rock and dense medium rock not requiring blasting.		
	Second Depth 2.00 to 4.00 m	m^3	152
	Third Depth 4.00 to 6.00 m	m^3	303
	Forth Depth 6.00 to 8.00 m	m^3	303
	Fifth Depth 8.00 to 10.00 m	m^3	303
	Sixth Depth 10.00 to 12.00 m	m^3	303
5	Plain Cement Concrete M10 using graded metal 40 : 60 of 20mm and 40 mm gauge hard broken granite stone jelly for all concrete items of works complete complying with standard specification and as directed by the departmental officers- Foundation and basement.	m^3	75
6	Providing and placing Reinforced Cement Concrete **M25** grade (Including Centering)		
a	Qty of concrete above Ground level	m^3	144.00
b	Qty of concrete 0 -1.50m	m^3	75

Sl. No.	Description of item	Unit	Total Qty
c	Qty of concrete 1.50-4.50m	m^3	231
7	Providing and placing No fine Concrete C.C 1 : 4 (Including Centering)		
	Above Ground level	m^3	6
8	Supplying , fabricating and placing in position Mild steel / Ribbed Tor steel grill for all RCC works	Qtl	324
9	(a) Drilling of 150 mm dia Vertical bore wells in hard rock areas to the required depth Rate as per TWAD BOARD SOR.	Rm	300
	(b) Drilling of 150 mm (6" dia) Horizontal bore wells (Rate as per TWAD BOARD SOR.)	Rm	360
10	Supplying and erection of PVC Special Blue slotted pipes for Borewells of size 140 mm dia with standard specifications.	No	113
11	Supplying and Fixing of PVC End cap of size 150 mm dia,6 Kg best approved quality with ISI mark complete complying with standard specifications.	No	12
12	Supply and filling of 40 mm HBS Jelly including cost and conveyance of materials to site of work as per standard specifications.	m^3	75
13	Supplying and filling with sand in layers of not more than 15 cm thick	m^3	75
14	Supplying and fixing of chain link fencing	m^2	102
15	Supplying and fixing of Mild steel grill gate for chain link fencing	Kg	96
16	Conveyance of excavated earth from the work site to outside of tank with a lead of 2 Km including all labour charges as directed by the Departmental officers complying with standard specification	m^3	2840
17	Dewatering with diesel engine and pumpset above 3 HP to 7.5 HP during excavation of soil and during construcion of recharge well structure cast vide TWAD board Schedule of Rates	1 Hr.	3000

Sl. No.	Description of item	Unit	Total Qty
18	Supplying Mild steel grill works for , including priming coat as per standard specifications.	1 Kg.	4500
19	Supplying and fixing of MS Angle for Truss work	1 Kg.	5880
20	Supplying and erecting of Weld mesh 10 x 10 cm 10 gauge as per standard Specifications.	m2	180
21	Painting the Iron work (or) Cement work in two coats with enamal paint including cost of paint etc.,Complete complying with standard specification.	m^2	540

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Executive Engineer, P.W.D
Ground Water Division,
Cuddalore.

Construction of 3 Nos of Artificial Recharge Well Structures in Manimuktha Sub Basin of Kallakurichi District

GENERAL ABSTRACT

Sl. No.	Description of item	Total Qty	Unit	Weighted Average Rate Rs.	Amount
1	Clearing Scrub jungle	7500	m^2	4.10	30750
2	Earth work open well excavation complying with relevant clauses of T.N.D.S.S. well sinking and with lead upto 10 meter in Hard stiff clay, stiff black cotton soil, hard red earth, shales, murram, gravel, stoney earth and earth mixed with small size boulders and hard gravely soil first depth of 2 meters.				
	First Depth of 0-2 m	637	m^3	83.80	53381
3	Earth work open well excavation complying with relevant clauses of T.N.D.S.S. well sinking and with lead upto 10 meters in soft disintegrated rock, laterite, soft rock or kankar not requiring blasting - Second depth				
	Second Depth 2.00 to 4.00m	830	m^3	258.20	214306
4	Earth work open well excavation complying with relevant clauses of T.N.D.S.S. well sinking and with lead upto 10 m in medium rock and dense medium rock not requiring blasting.				
	Second Depth 2.00 to 4.00 m	152	m^3	623.20	94726
	Third Depth 4.00 to 6.00 m	303	m^3	934.80	283245
	Forth Depth 6.00 to 8.00 m	303	m^3	1246.40	377658
	Fifth Depth 8.00 to 10.00 m	303	m^3	1558.00	472074
	Sixth Depth 10.00 to 12.00 m	303	m^3	1869.60	566490
5	Plain Cement Concrete M10 using graded metal 40 : 60 of 20mm and 40 mm gauge hard broken granite stone jelly for all concrete items of works complete complying with standard specification and as directed by the departmental officers- Foundation and basement.	75	m^3	4641.60	348120
6	Providing and placing Reinforced Cement Concrete **M25** grade (Including Centering)				
a	Qty of concrete above Ground level	144.00	m^3	12545.75	1806588
b	Qty of concrete 0 -1.50m	75	m^3	11819.21	886441

Sl. No.	Description of item	Total Qty	Unit	Weighted Average Rate Rs.	Amount
c	Qty of concrete 1.50-4.50m	231	m^3	9674.85	2234890
7	Providing and placing No fine Concrete C.C 1 : 4 (Including Centering)				
	Above Ground level	6	m^3	7013.83	42083
8	Supplying , fabricating and placing in position Mild steel / Ribbed Tor steel grill for all RCC works	324	Qtl	6926.67	2244240
9	(a) Drilling of 150 mm dia Vertical bore wells in hard rock areas to the required depth Rate as per TWAD BOARD SOR.	300	Rm	783.18	234954
	(b) Drilling of 150 mm (6" dia) Horizontal bore wells (Rate as per TWAD BOARD SOR.)	360	Rm	827.78	298002
10	Supplying and erection of PVC Special Blue slotted pipes for Borewells of size 140 mm dia with standard specifications.	113	No	406.00	45798
11	Supplying and Fixing of PVC End cap of size 150 mm dia,6 Kg best approved quality with ISI mark complete complying with standard specifications.	12	No	111.00	1332
12	Supply and filling of 40 mm HBS Jelly including cost and conveyance of materials to site of work as per standard specifications.	75	m^3	1222.52	91689
13	Supplying and filling with sand in layers of not more than 15 cm thick	75	m^3	904.20	67815
14	Supplying and fixing of chain link fencing	102	m^2	185.00	18870
15	Supplying and fixing of Mild steel grill gate for chain link fencing	96	Kg	72.00	6912
16	Conveyance of excavated earth from the work site to outside of tank with a lead of 2 Km including all labour charges as directed by the Departmental officers complying with standard specification	2840	m^3	96.80	274912
17	Dewatering with diesel engine and pumpset above 3 HP to 7.5 HP during excavation of soil and during construcion of recharge well structure cast vide TWAD board Schedule of Rates	3000	1 Hr.	333.89	1001670

Sl. No.	Description of item	Total Qty	Unit	Weighted Average Rate Rs.	Amount
18	Supplying Mild steel grill works for , including priming coat as per standard specifications.	4500	1 Kg.	72.00	324000
19	Supplying and fixing of MS Angle for Truss work	5880	1 Kg.	82.80	486864
20	Supplying and erecting of Weld mesh 10 x 10 cm 10 gauge as per standard Specifications.	180	m2	170.00	30600
21	Painting the Iron work (or) Cement work in two coats with enamal paint including cost of paint etc.,Complete complying with standard specification.	540	m^2	118.00	63720
	Total Civil Cost				**12602130**
22	GST at 12%				1512256
23	Provision for Petty Supervision Charges, Advertisement charges, Documentation charges, Photographic charges, Name board, Impact assessment studies, Contingent charges and Unforeseen items @ 2.5 %				320314
24	Provision for Labour Welfare Fund @ 1 %				145300
	TOTAL				**14580000**

31/12/20

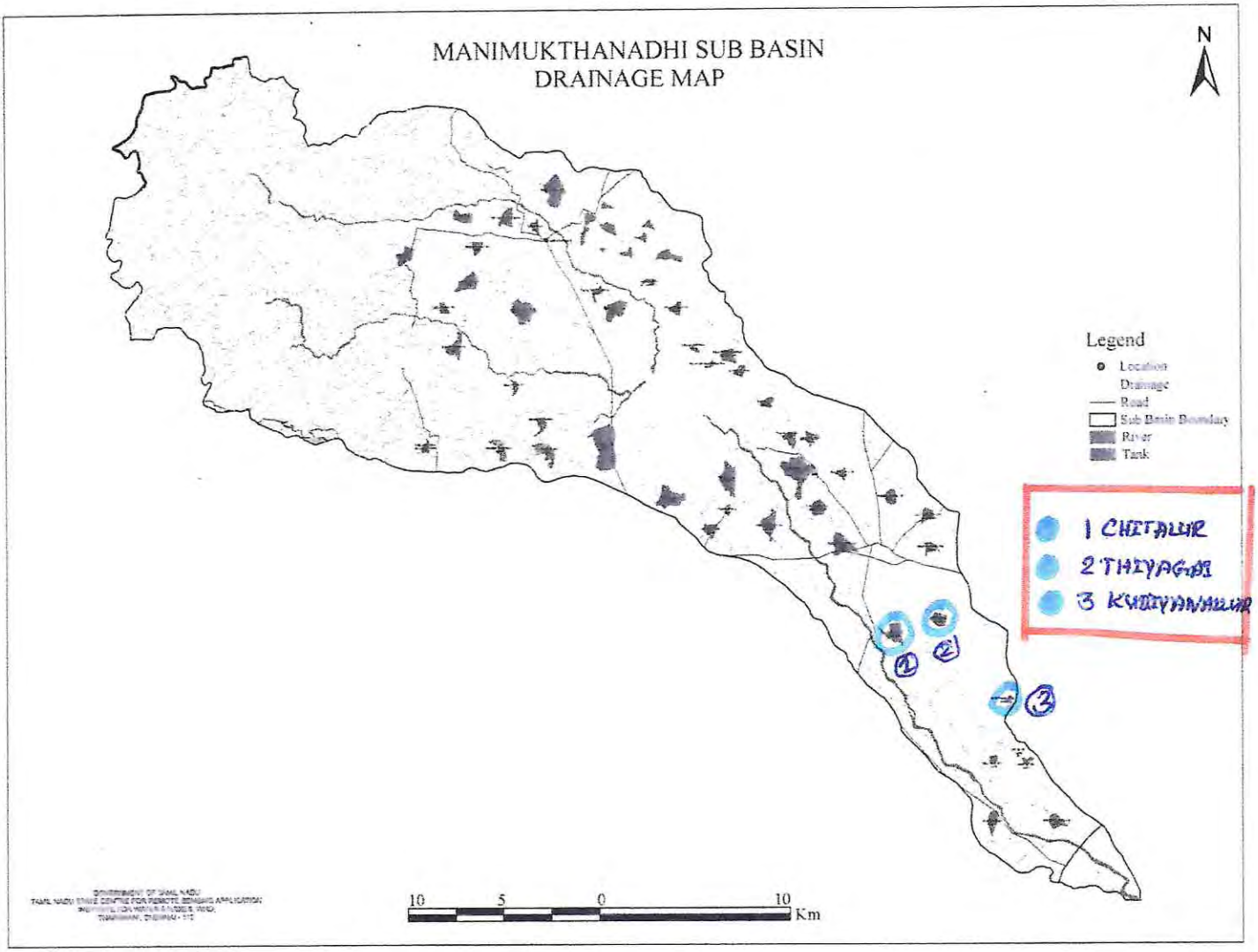
Assistant Engineer,P.W.D.,
Ground Water Section ,
Neyveli.

31/12/2020

Assistant Executive Engineer,P.W.D.(I/c)
Ground Water SubDivision
Neyveli

31/12/20

Executive Engineer, P.W.D
Ground Water Division,
Cuddalore.

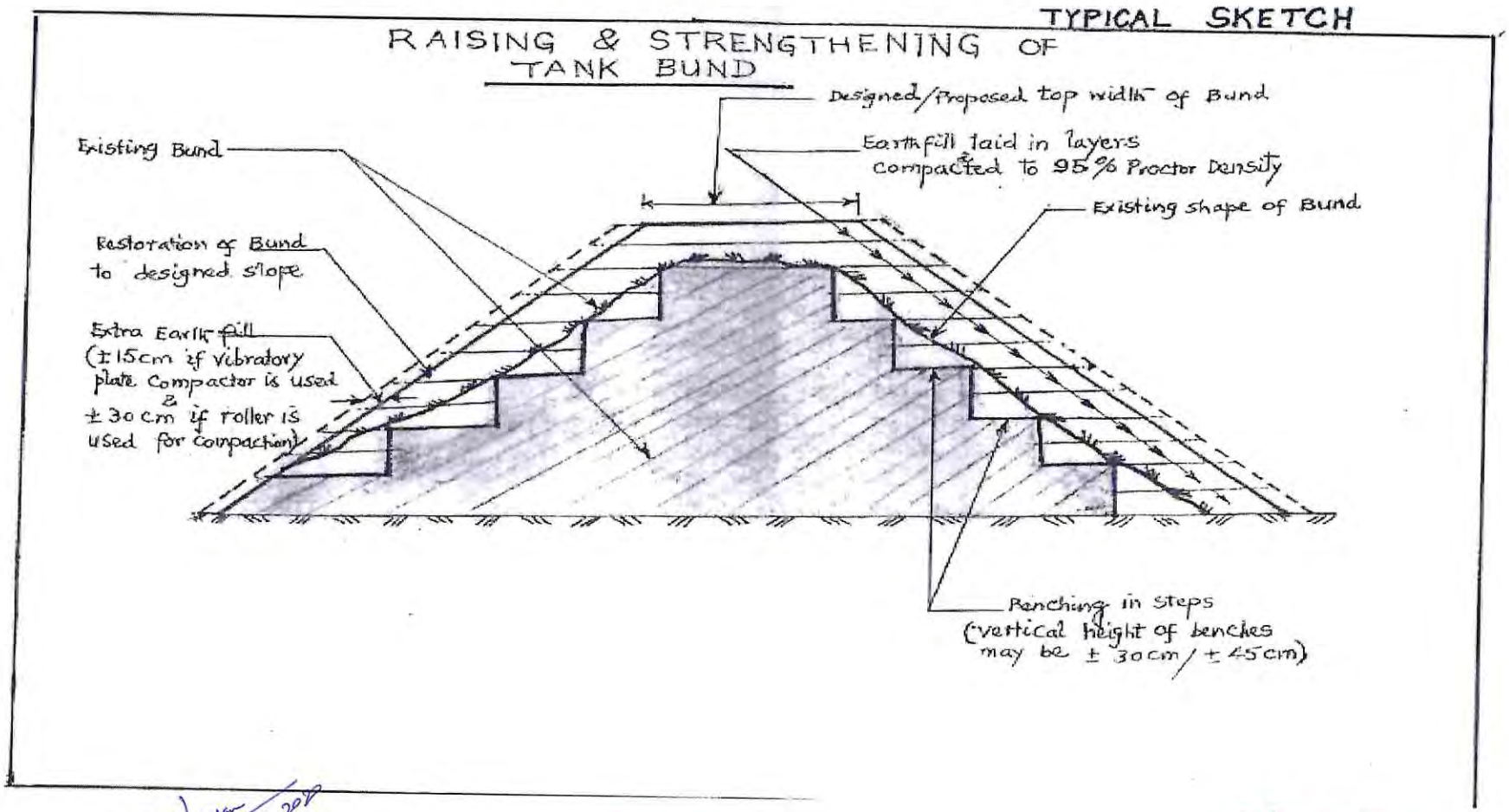


ASSISTANT ENGINEER, PWD
Ground Water Sub - Division,
Section - Neyveli - 607 803.

Assistant Executive Engineer, P.W.D., W.R.D.,
Ground Water Sub Division
Neyveli.

9. DRAWINGS

9.1. METHODOLOGY OF RAISING & STRENGTHENING OF TANK BUND



A. Nagoor 17.09.2020
Assistant Engineer, PWD/WRD.,
Irrigation Section,
Sankarapuram.

Assistant Executive Engineer, PWD/WRD.,
Vellar Basin Sub Division,
Kallakurichi.

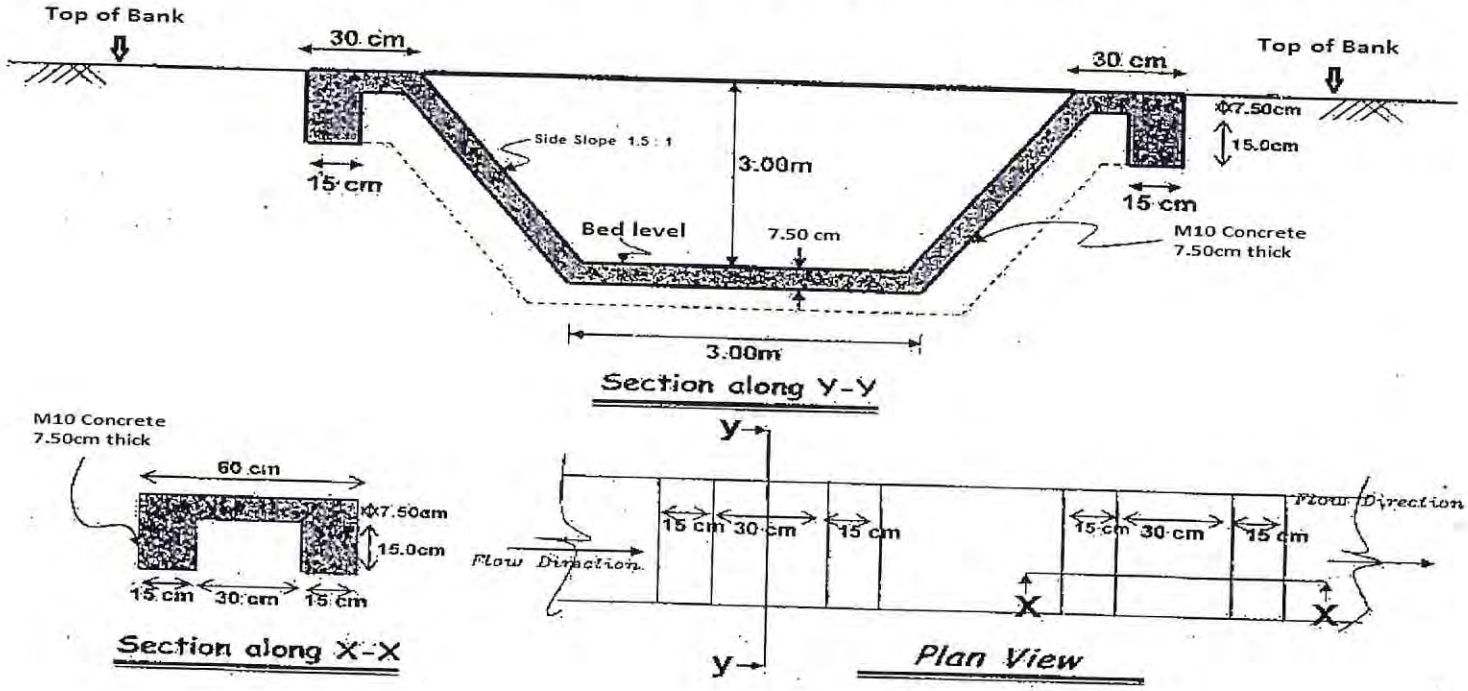
17/9/2020
Executive Engineer, PWD/WRD.,
Vellar Basin Division,
Vridhachalam.

List of supply channels in which bed bar is provided

1. Peruvangur Tank supply channel
2. Thandalai Tank supply channel
3. Thirukkanangur Tank supply channel
4. Alathur Tank supply channel
5. Chittalur Tank supply channel
6. Kudiyanallur Tank supply channel
7. Kuthakkudi Tank supply channel
8. Pallagacheri Tank supply channel
9. Prithivimangalam Tank supply channel
10. 10 .Sithathur Tank supply channel
11. 11.Thyiyagai Tank supply channel
12. Udayampattu Tank supply channel
13. Udayanatchi Tank supply channel
14. Kumarapalayam anicut supply channel

9.2. BED BAR FOR SUPPLY CHANNEL

TYPICAL DRAWING OF BED BAR / MODEL SECTION



A. Nayar 17.09.2020

Assistant Engineer, PWD/WRD.,
Irrigation Section,
Sankarapuram.

Assistant Executive Engineer, PWD/WRD.,
Vellar Basin Sub Division,
Kallakurichi.

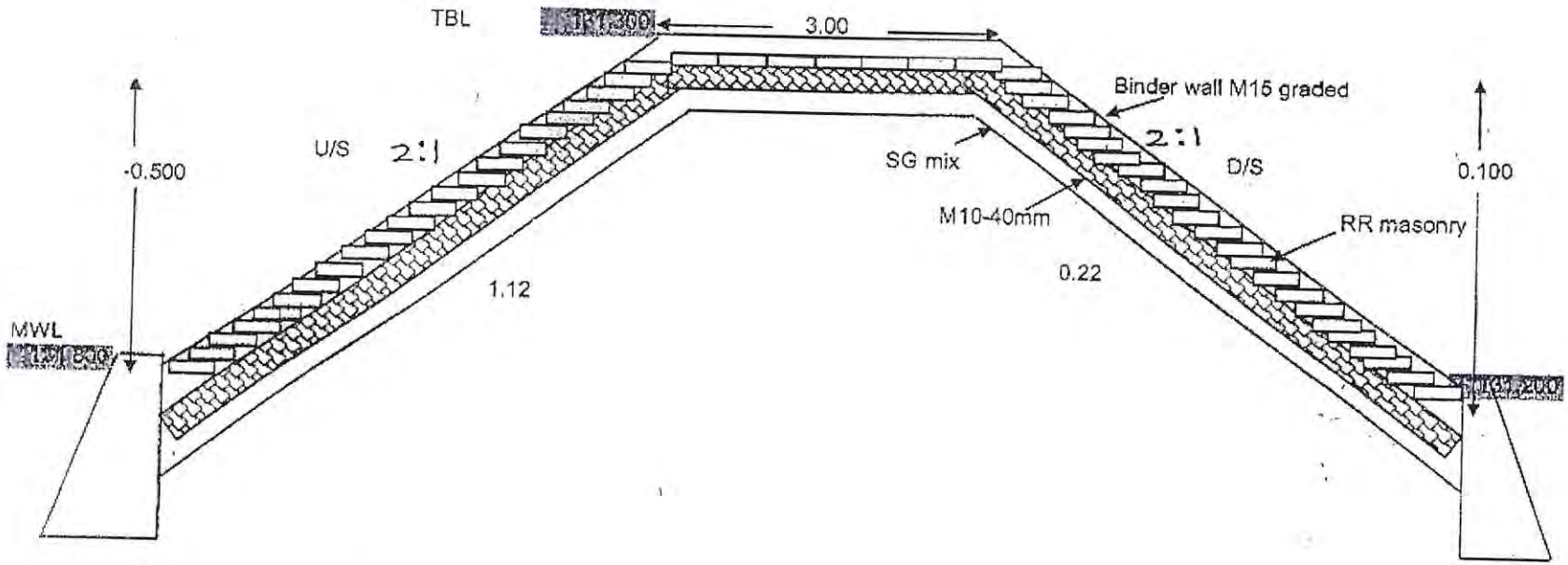
15.9.2020

Executive Engineer, PWD/WRD.,
Vellar Basin Division,
Vridhachalam.

9.3. MODEL SECTION OF TANK BUND

Name of work: Rehabilitation and Modernisation of Non System tanks and its supply channels

Model section



Assistant Engineer, PWD/WRD.,
Irrigation Section,
Sankarapuram.

Assistant Executive Engineer, PWD/WRD.,
Vellar Basin Sub Division,
Kallakurichi.

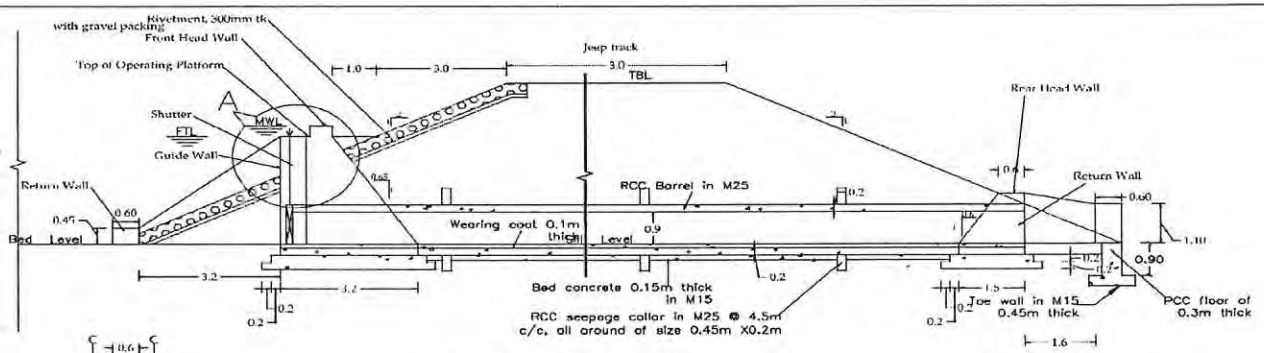
Executive Engineer, PWD/WRD.,
Vellar Basin Division,
Vridhachalam.

Proposed Repairs of sluice in Tanks

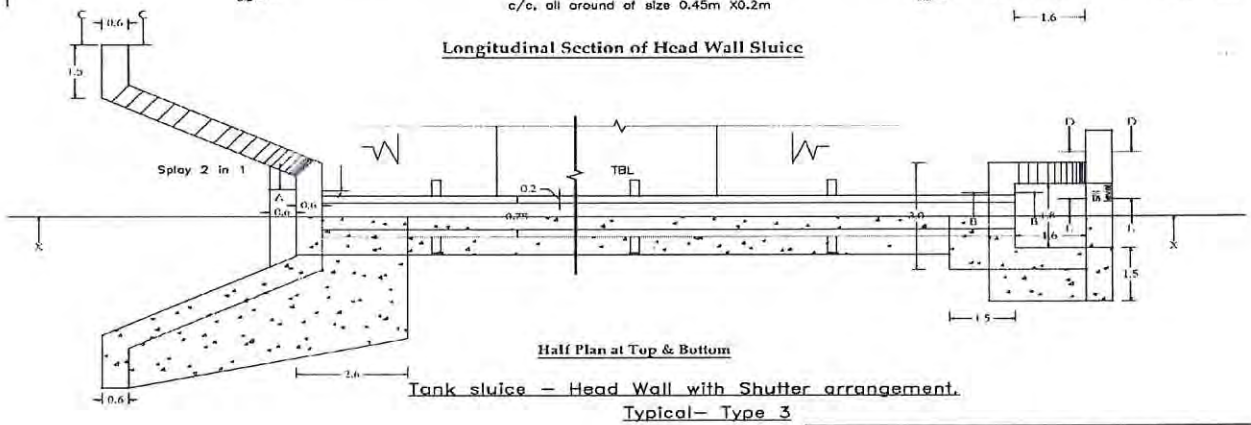
Sl. No	Name of tank	Sluice No.
1.	Peruvangur Tank	1
2.	Thandalai Tank	1
3.	Thirukkanangur Tank	2
4.	Ka.Alambalam Tank	1
5.	Alathur Tank	2
6.	Chittalur Tank	2
7.	Kudiyanallur Tank	1
8.	Koothakkudi Tank	1
9.	Ninnaiyur Tank	1
10.	Prithivimangalam	2
11.	Sithathur Tank	2
12.	Thyiyagai Tank	1
13.	Udayamampattu Tank	1
14.	Udayanatchi Tank	2
15.	Vada Thorasalur Tank	2
16.	Pallagacherry Tank	8
17.	Kalayanallur Tank	1
18.	Chellampattu Tank	1

19.	Kosapadi Tank	1
20.	Manjaputtur Tank	1
21.	Pandalam Tank	1
22.	Poikunam Tank	1
23.	Pootai Tank	1
24.	Sembarampattu Tank	2
25.	Urangani Tank	1
26.	Vadachettiyandal	1
27.	Palaya SiruvangurPeriya Eri	1
28.	Kacharayapalayam Tank	1
29.	VadakanandalKalleri Tank	1
	Total	**44 Nos**

9.4. Repairs to Sluice



Longitudinal Section of Head Wall Sluice



Half Plan at Top & Bottom

Tank sluice – Head Wall with Shutter arrangement.
Typical– Type 3

Sheet No. 4/6

PUBLIC WORKS DEPARTMENT
OFFICE OF THE SUPERINTENDING ENGINEER, PWD,
DESIGNS CIRCLE, WRO, CHENNAI – 600 005

Designed & Drawn by Er. V.P.VENKATESH PRABU, AE II/I		NAME OF WORK:
Checked by Er. M.NIRAIMATHY, AEE–I (SDO)		IAMWARM –II – TYPICAL DRAWING FOR TANK SLUICE
Verified by Tr.AMELIA BAI RAJ, EE(SDO)		
Recommended by Er. K. BALAIYA, SE(D)		DESIGNED DRAWING OF TANK SLUICE Head Wall with Shutter arrangement Typical Type – 3
Approved by Er. S.THINAKARAN, CE(PF)		
DWG.NO: / 2016	SCALE 1 : 100	APPROVED BY CE(PF) IN L. No: CE(SDO) 3/ AEE –I (SDO)/ F /2016–I Dt: . 2016

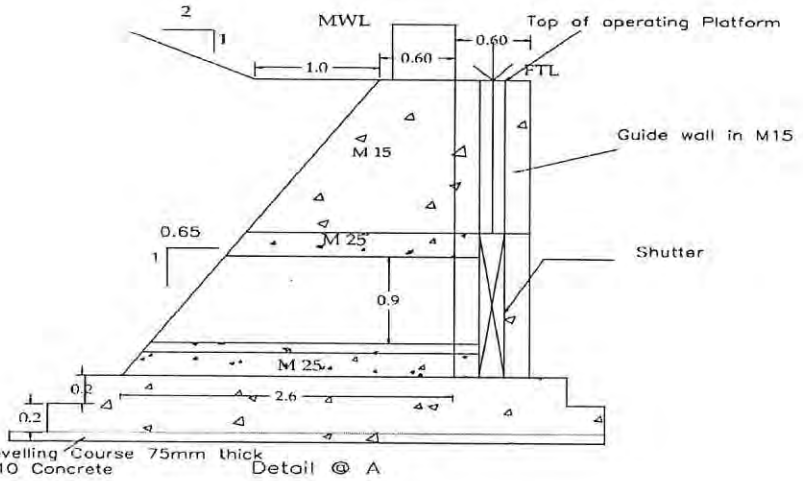
Notes:
1. All dimensions are in metres unless otherwise specified
2. This drawing should be read along with Dwg No. / 2016 to Dwg No. 2016

17.09.2020

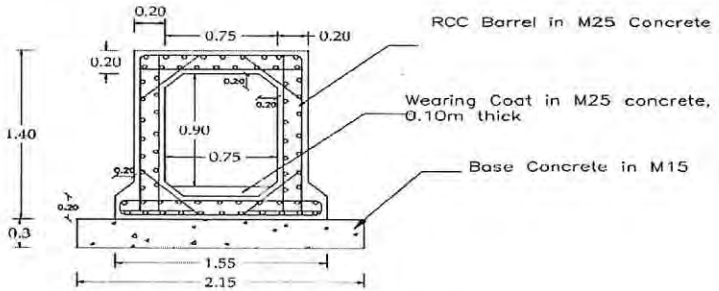
Assistant Engineer, PWD/WRD.,
Irrigation Section,
Sankarapuram.

Assistant Executive Engineer, PWD/WRD.,
Vellar Basin Sub Division,
Kallakurichi.

Executive Engineer, PWD/WRD.,
Vellar Basin Division,
Vridhachalam.

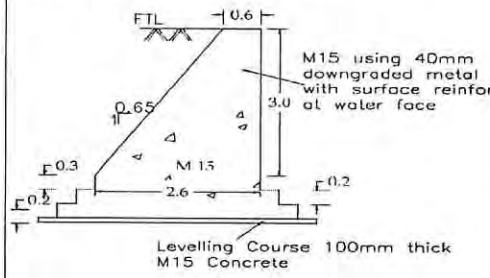


Detail @ A

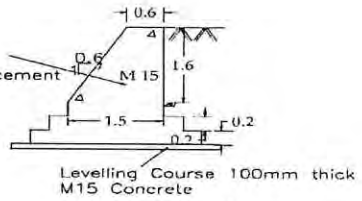


Details of RCC Barrel

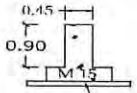
REINFORCEMENT DETAILS FOR SLUICE BARREL								
	Diameter	Spacing					Diameter	Spacing
Bottom Slab			Top Slab			Side Wall		
Main rod (Bottom thro)	12mm	200mm	Main rod (Bottom thro)	12mm	200mm	Main rod (Earth face)	12mm	200mm
Main rod (Top thro)	12mm	200mm	Main rod (Top thro)	12mm	200mm	Main rod (Water face)	12mm	200mm
Distributor	10mm	200mm	Distributor	10mm	200mm	Distributor	10mm	200mm
Haunch Bar	12mm	200mm	Haunch Bar	10mm	200mm			



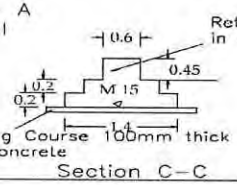
Section A– A
Face Wall



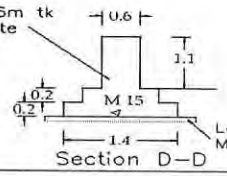
Section B– B



Section E–E



Section C–C



Section D–D

Notes:
1. All dimensions are in metres unless otherwise specified
2. This drawing should be read along with Dwg No. / 2016 to Dwg No. /2016

Sheet No. 5/6

PUBLIC WORKS DEPARTMENT
OFFICE OF THE SUPERINTENDING ENGINEER, PWD,
DESIGNS CIRCLE, WRO, CHENNAI – 600 005

Designed & Drawn by Er.V.P.VENKATESH PRABU, AE–II/I		NAME OF WORK:
Checked by Er.M.NIRAIMATHY, AEE–I (SDD)		IAMWARM –II – TYPICAL DRAWING FOR TANK SLUICE
Verified by Er.AMELIA BALRAJ, FF(SDD)		
Recommended by Er.K.BALAIYA, SE(D)		DESIGNED DRAWING OF TANK SLUICE
Approved by Er.S.THINAKARAN, CE(PF)		CROSS SECTION OF BARREL
DWG.NO: / 2016	SCALE 1 : 75	APPROVED BY CE.(PF) IN Lr No: / CE / SE(D) / FF(SDD) I/ AEE –I (SDD)/ F /2016-I Dt: .2018

A. [signature] 17.09.2020
Assistant Engineer, PWD/WRD.,
Irrigation Section,
Sankarapuram.

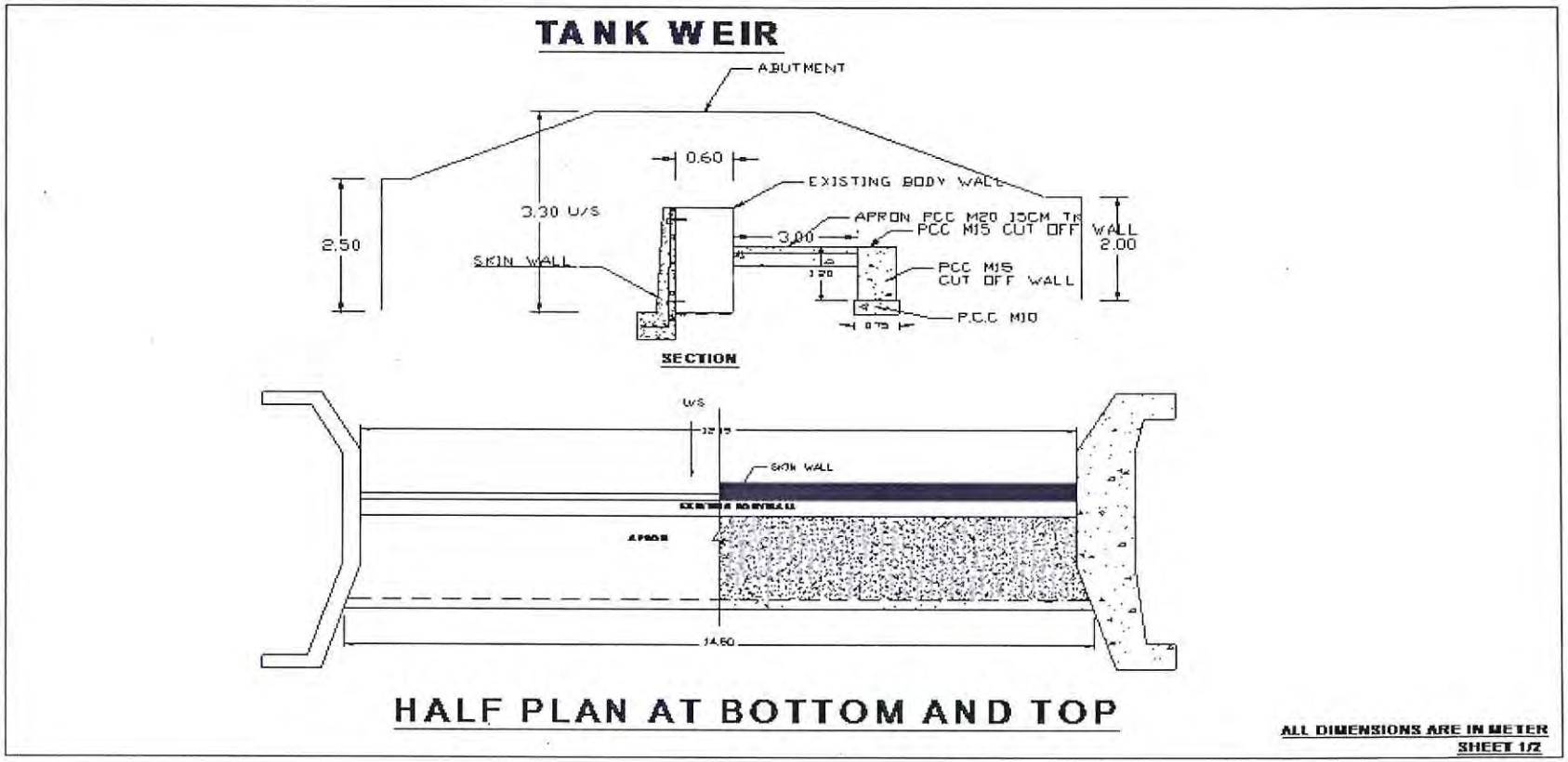
Assistant Executive Engineer, PWD/WRD.,
Vellar Basin Sub Division,
Kallakurichi.

17/9/2020
Executive Engineer, PWD/WRD.,
Vellar Basin Division,
Vridhachalam.

Proposed Repair to weir in Tanks

Sl. No	Name of tank	Weir No.
1.	Peruvangur tank	1
2.	Kudiyanallur Tank	1
3.	Chittalur tank	1
4.	Ninnaiyur Tank	1
5.	Udayanatchi Tank	1
6.	Vadathorasalur Tank	1
7.	Kacharayapalayam Tank	1
	Total	**7 Nos**

9.5. Repairs to Wier



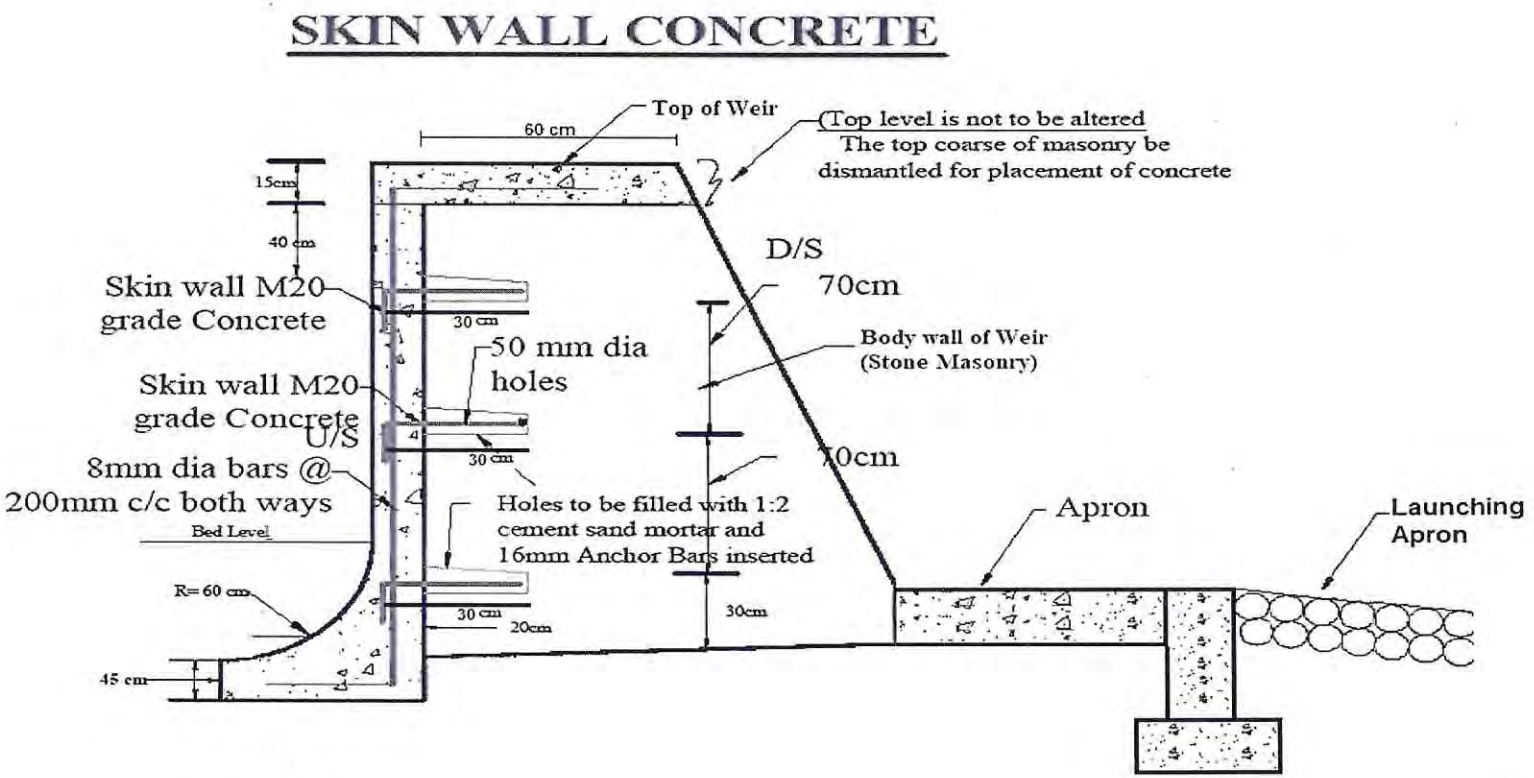
2578

A. Nayeem 17.09.2020
Assistant Engineer, PWD/WRD.,
Irrigation Section,
Sankarapuram.

Assistant Executive Engineer, PWD/WRD.,
Vellar Basin Sub Division,
Kallakurichi.

17.9.2020
Executive Engineer, PWD/WRD.,
Vellar Basin Division,
Vridhachalam.

9.5. Repairs to Wier – Skin wall concrete



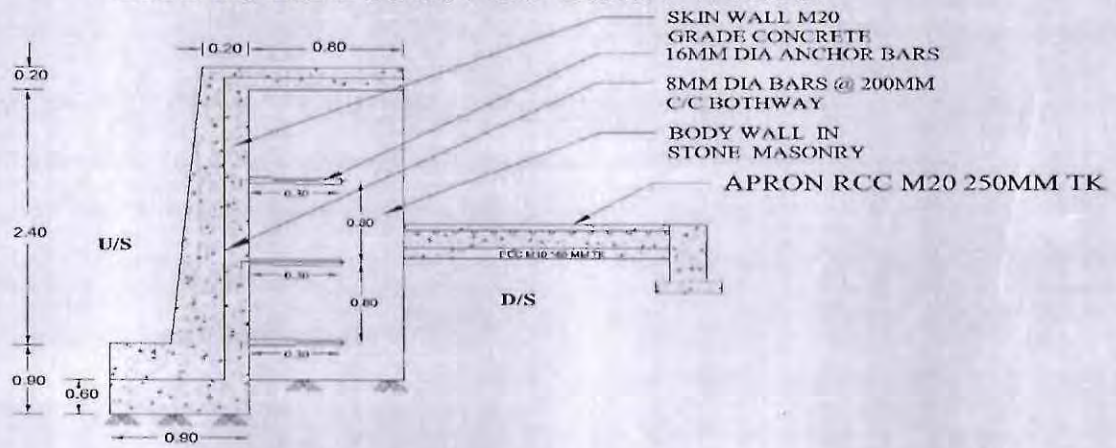
Assistant Engineer, PWD/WRD.,
Irrigation Section,
Sankarapuram.

Assistant Executive Engineer, PWD/WRD.,
Vellar Basin Sub Division,
Kallakurichi.

Executive Engineer, PWD/WRD.,
Vellar Basin Division,
Vridhachalam.

9.6.REPAIRS TO ANICUT (SKINWALL)

CROSS SECTION OF SKIN WALL



1) Joints on u/s surface to be raked to 25mm depth & surface roughened by chipping.
2) Drill- holes of 50mm to be filled with 1:2 mortar and 16mm Anchor bars to be pushed in. The roughened surface to be kept wet for 72 hours & cement slurry (1:2:5) of 0.70 water - cement ratio be applied over the surface prior to placement of skin concrete.
3) Cement concrete of M20 Grade concrete is to be used with 20mm maximum aggregate size.
4) Curing is to be done for 21 days
   * Thickness of skin concrete : 15cm @ top & 20cm at bottom for anicutsof height upto 1.50m and 20cm at top & 30cm at bottom for anicuts of height more than 1.50m

260

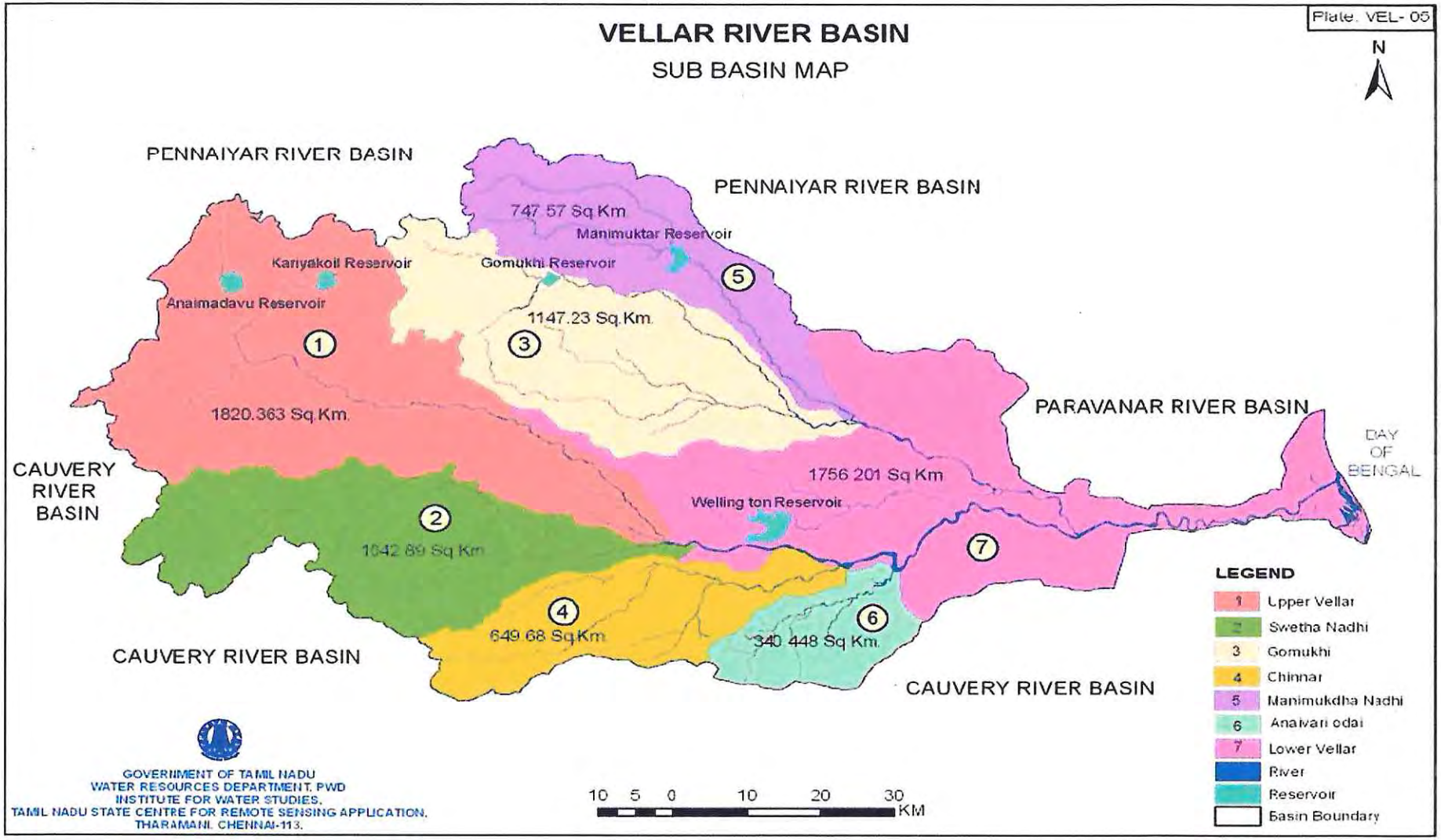
A. Nagu 17.09.2020
Assistant Engineer, PWD/WRD.,
Irrigation Section,
Sankarapuram.

Assistant Executive Engineer, PWD/WRD.,
Vellar Basin Sub Division,
Kallakurichi.

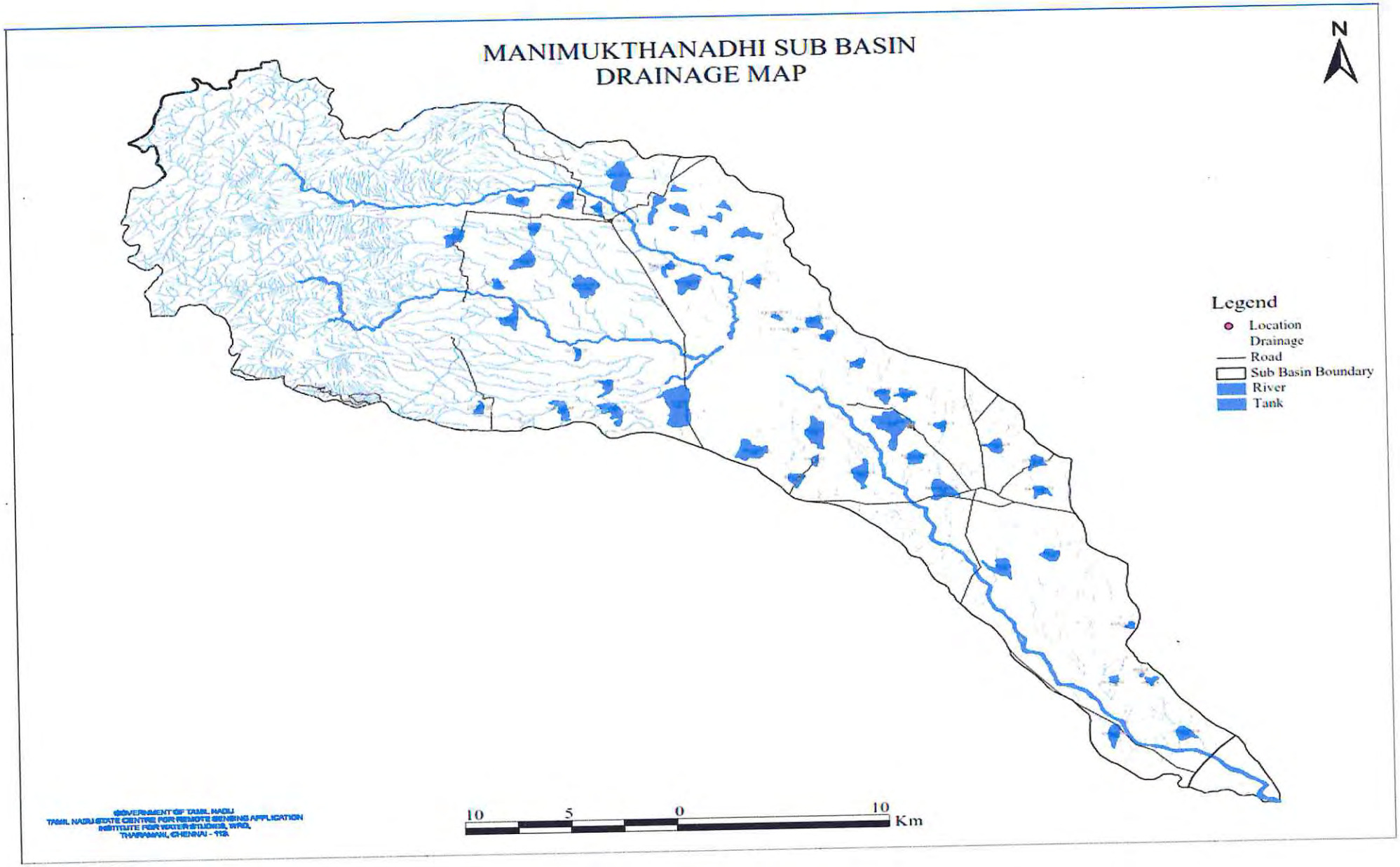
17.9.2020
Executive Engineer, PWD/WRD.,
Vellar Basin Division,
Vridhachalam.

10.MAPS

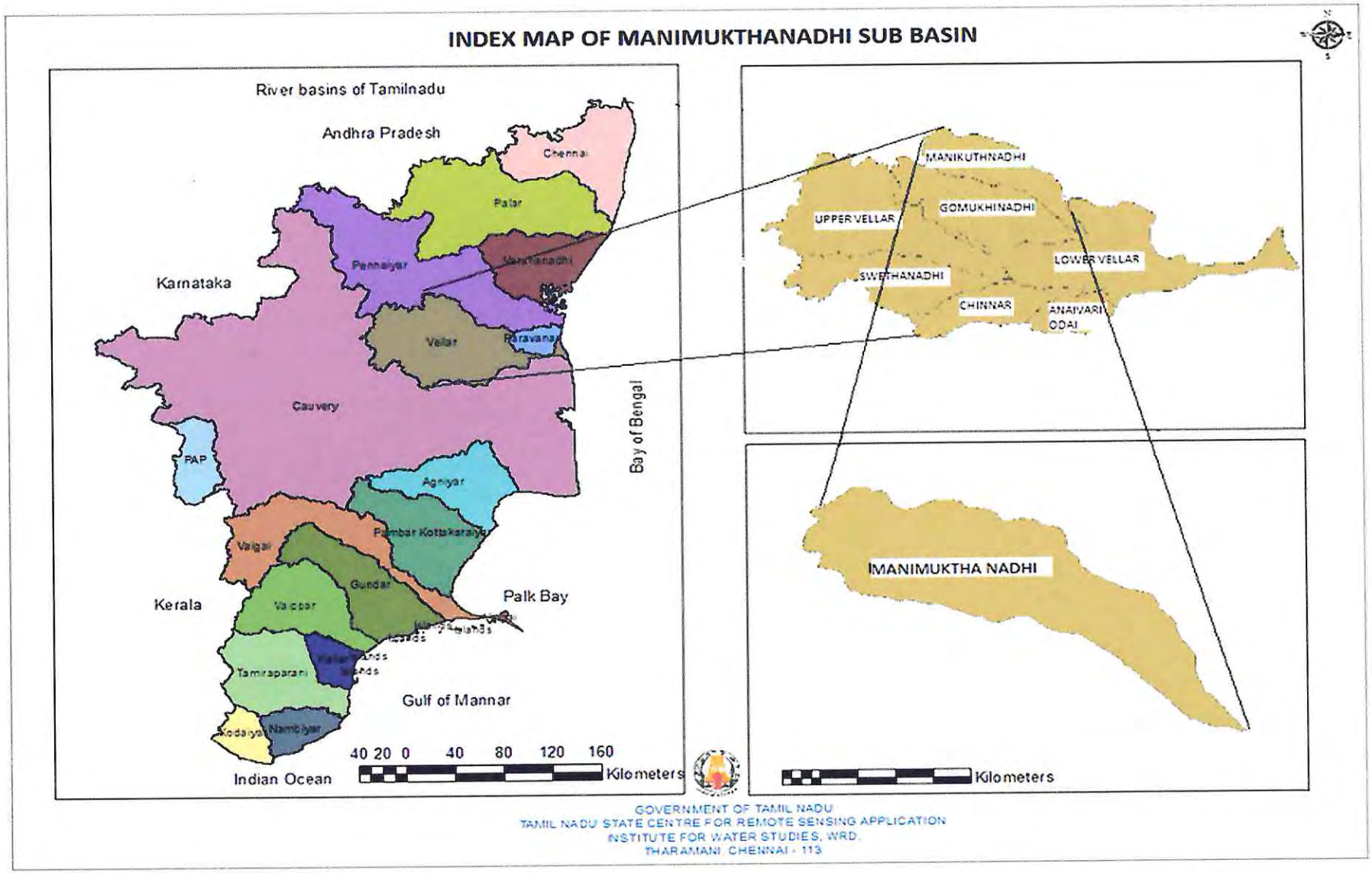
10.1 Basin Map



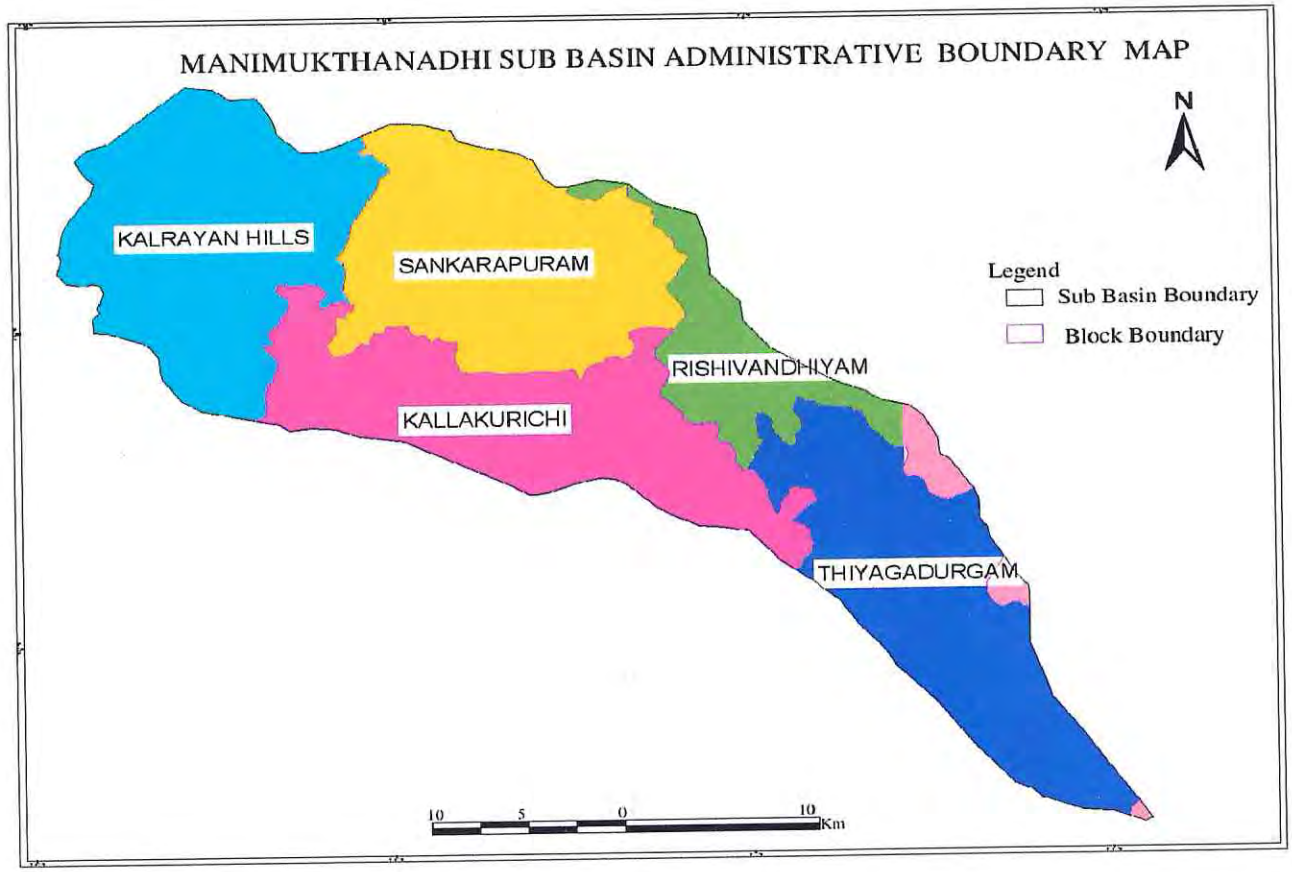
10.2 Sub Basin Drainage Map



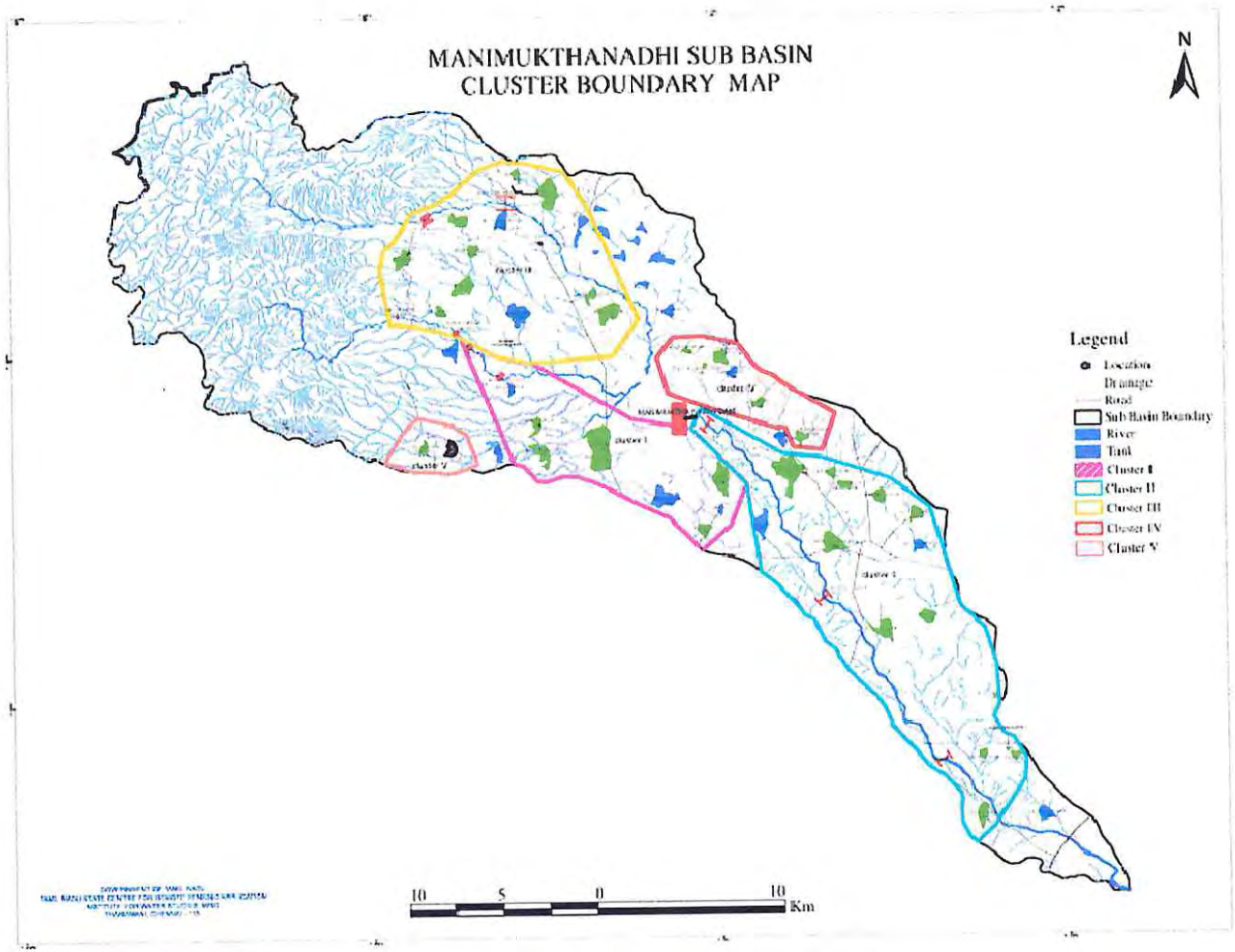
10.3. IndexMap



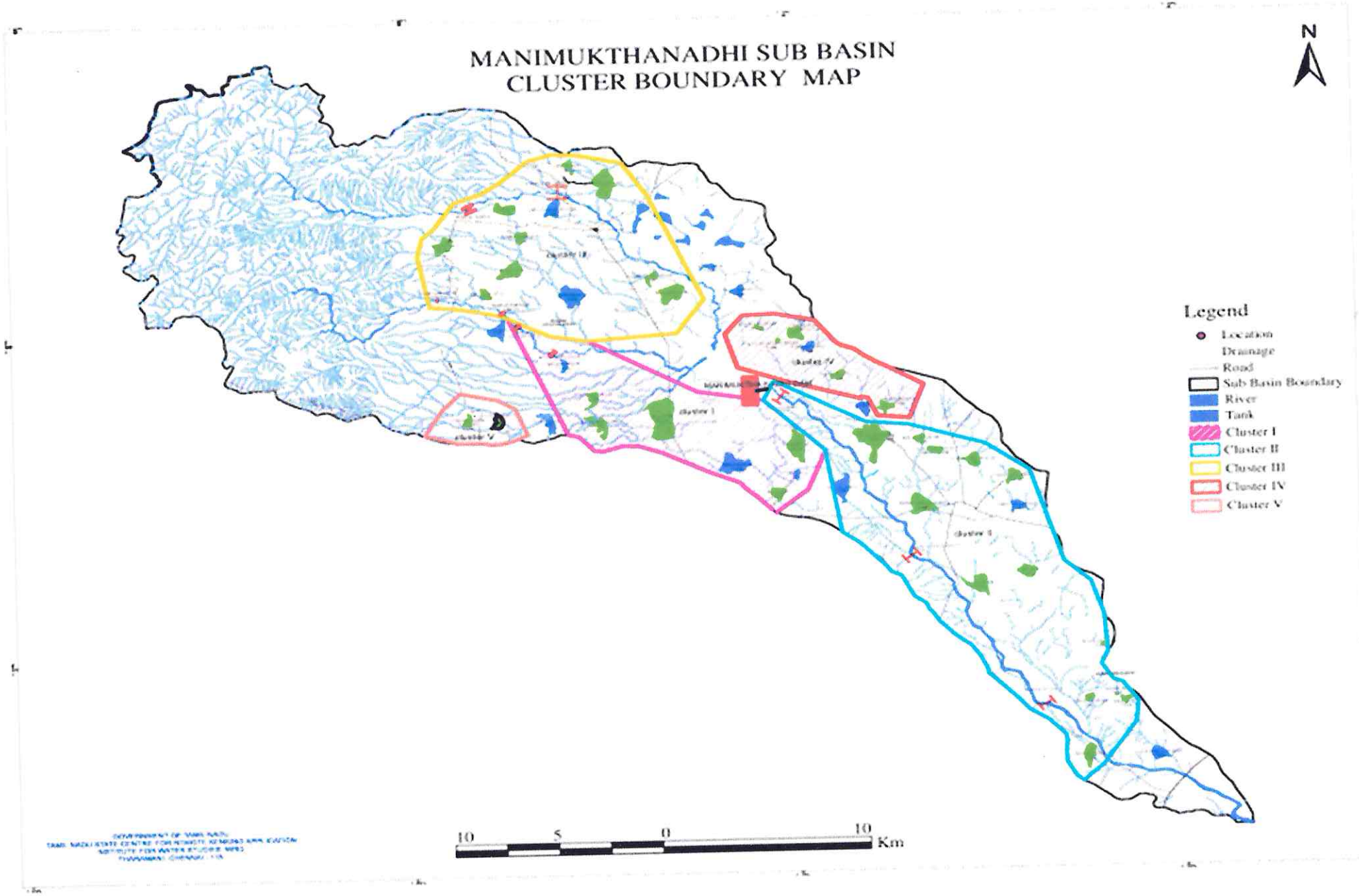
10.4 Sub Basin Administrative Map



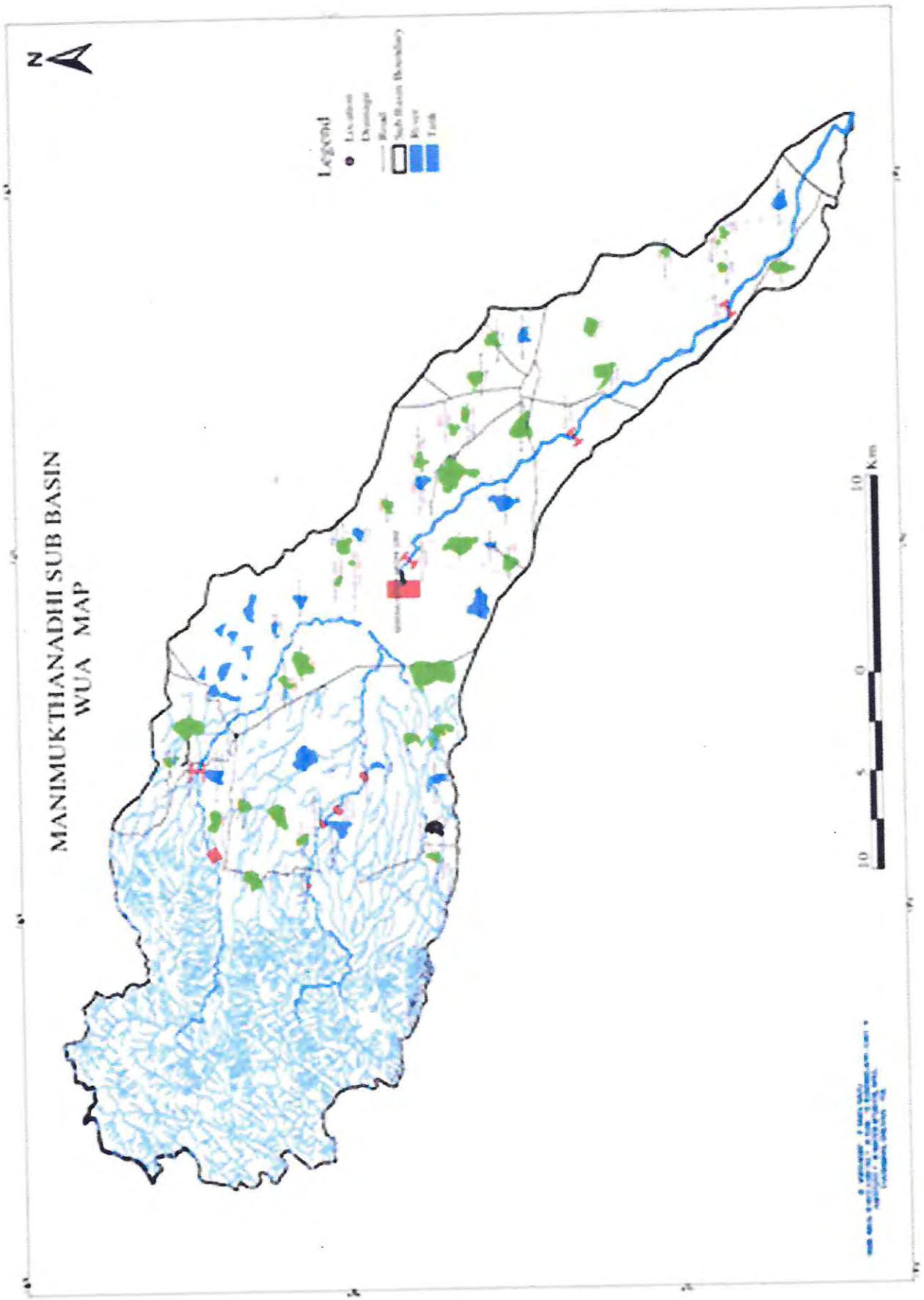
10.5.Sub Basin Cluster Boundary Map



10.6. Sub Basin Package Boundary Map

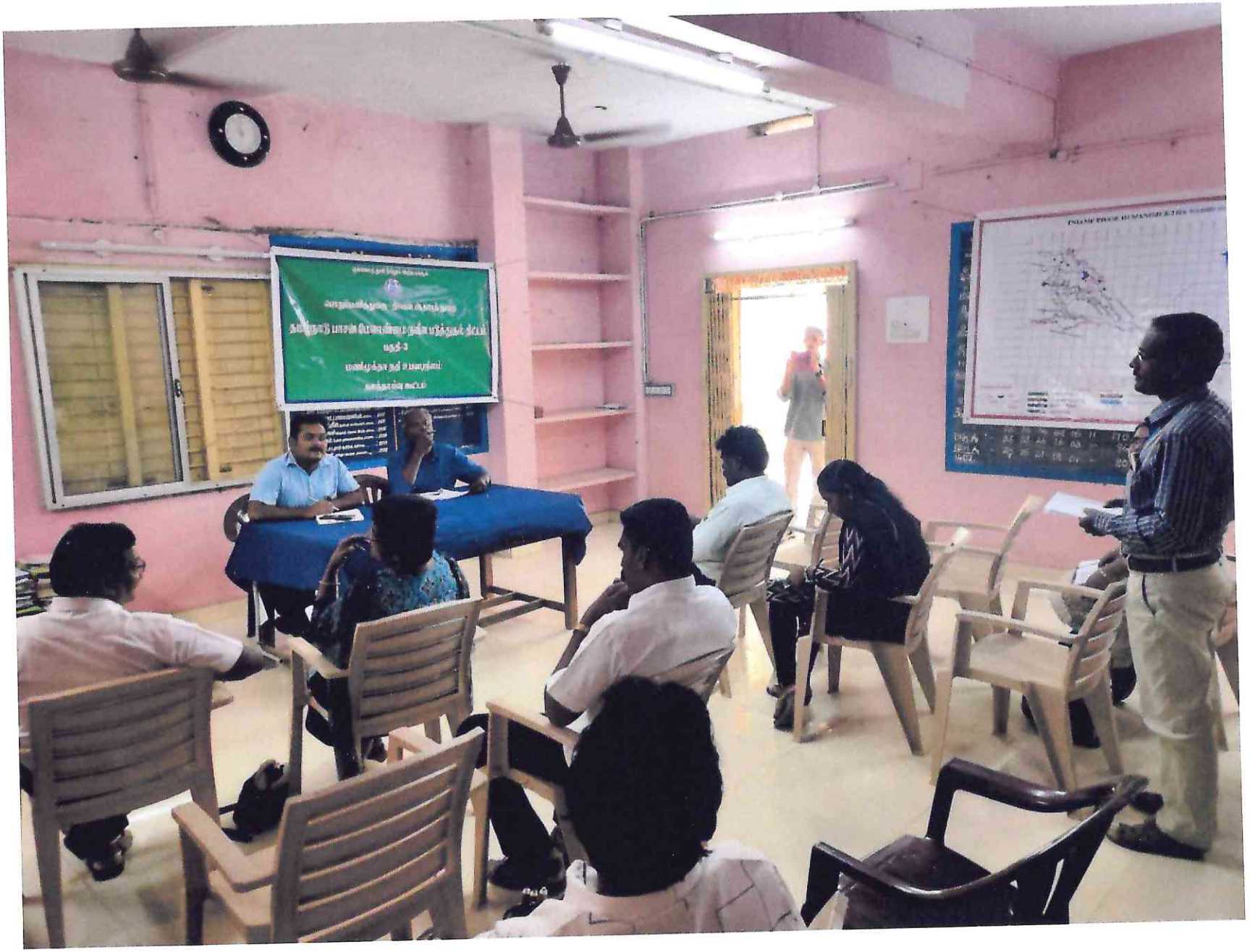


10.7. Sub Basin WUA Map



10.9. PHOTOS

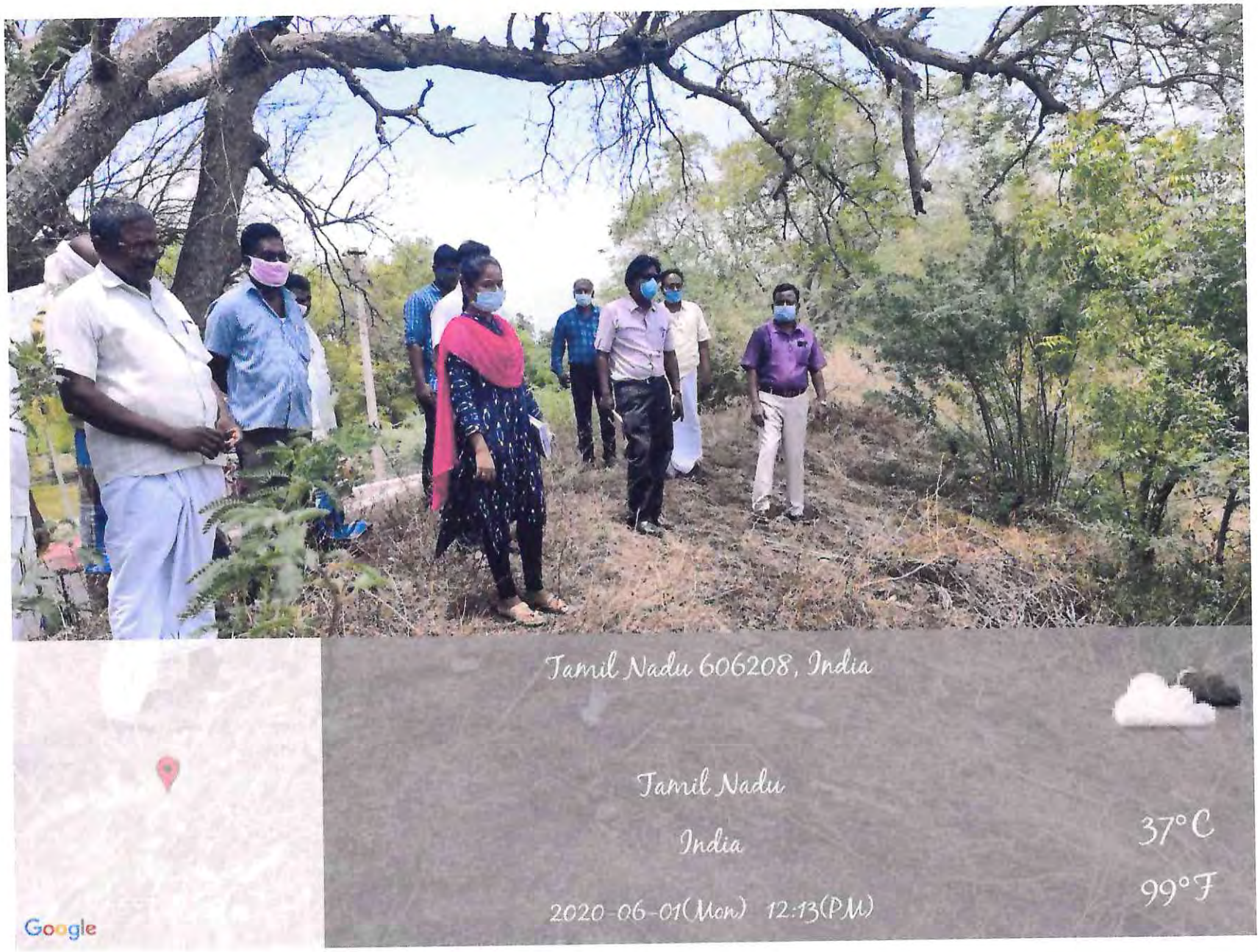
MEETING CONDUCTED BY NODAL OFFICER WITH LINE DEPARTMENTS ON 21.02.2020



MEETING CONDUCTED BY NODAL OFFICER WITH LINE DEPARTMENTS ON 21.05.2020



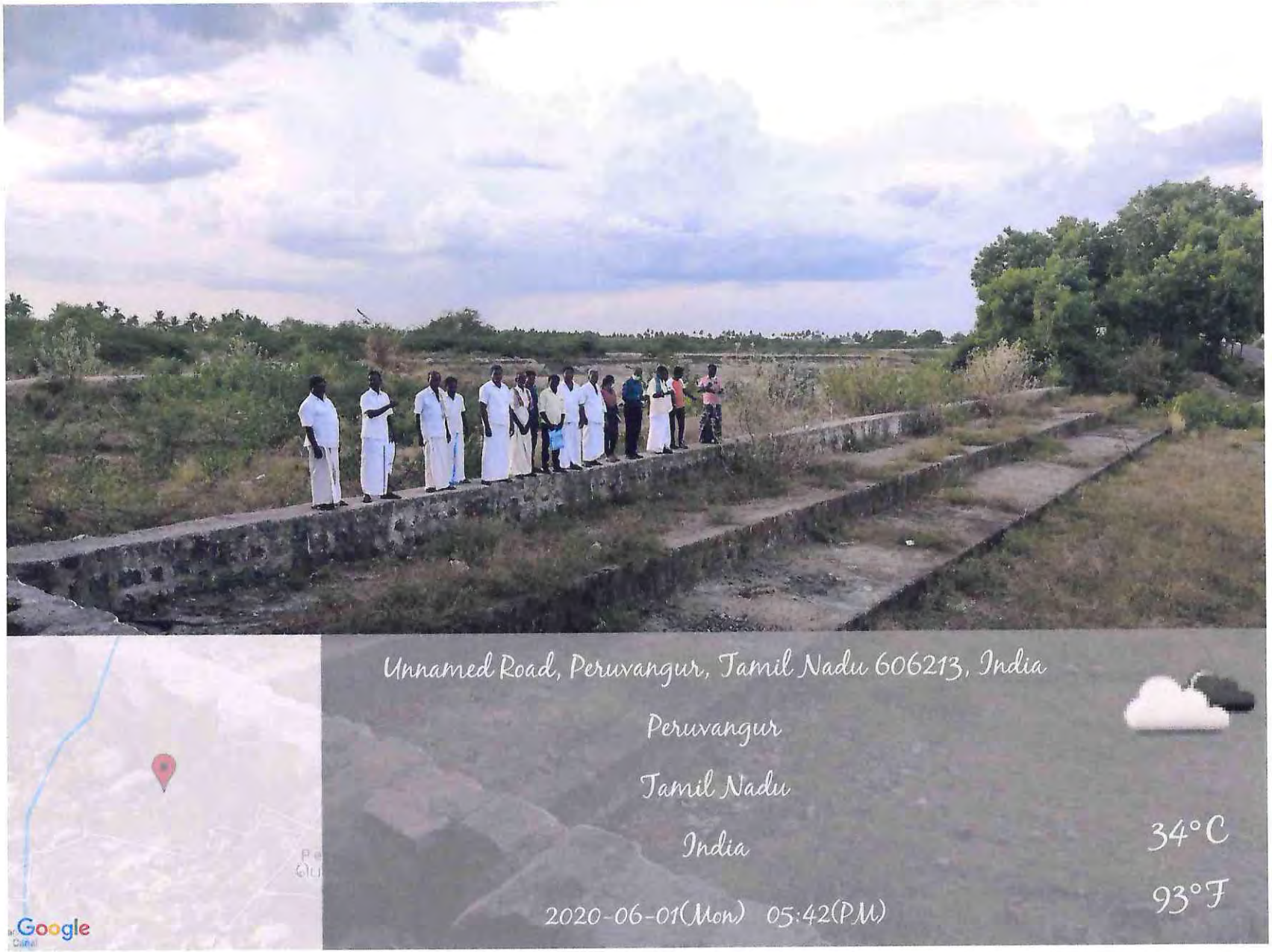
WALK THROUGH SURVEY TO ALATHUR VILLAGE ON 01.06.2020



WALK THROUGH SURVEY TO THANDALAI VILLAGE ON01.06.2020



WALK THROUGH SURVEY TO PERUVANGUR VILLAGE ON 01.06.2020



WALK THROUGH SURVEY TO THIRUKANANGUR VILLAGE ON 02.06.2020



WALK THROUGH SURVEY TO THIYAGAI VILLAGE ON 02.06.2020

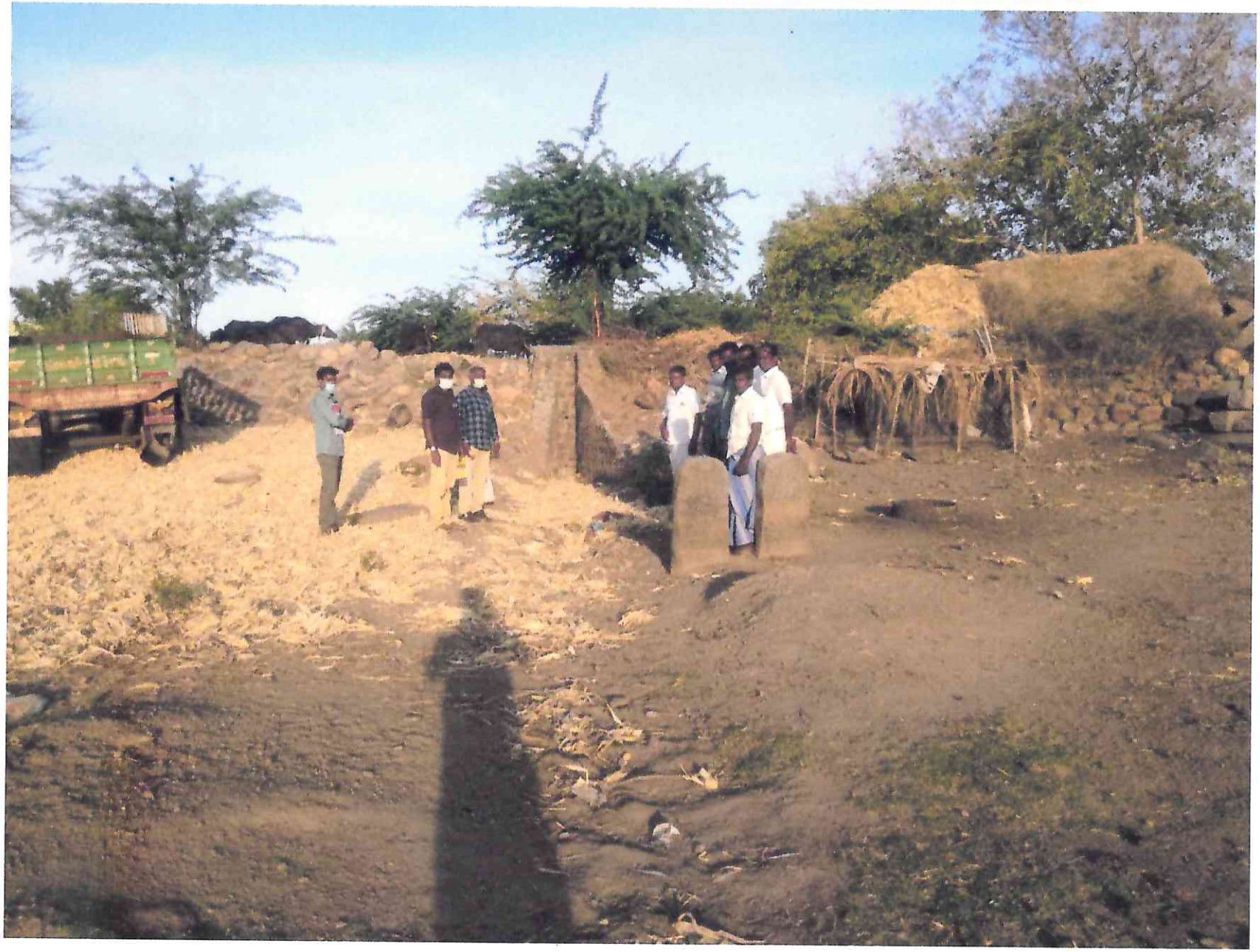


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WALK THROUGH SURVEY TO UDHAYAMAMPATTU VILLAGE ON 02.06.2020



WALK THROUGH SURVEY TO PALLAGACHERRY VILLAGEON 05.06.2020



WALK THROUGH SURVEY TO PALLAGACHERRY VILLAGE ON 05.06.2020

