PUBLIC WORKS DEPARTMENT

WATER RESOURCES DEPARTMENT

CHENNAI REGION

TAMILNADU IRRIGATED AGRICULTURE MODERNIZATION PROJECT (TNIAMP)

PHASE– III

MANIMUKTHANADHI SUB BASIN

DETAILED PROJECT REPORT

VOLUME II

PROJECT COST :Rs.1553.00 LAKHS.

AYACUT:2830.15Ha.

CHENNAI REGION, CHENNAI,

VELLAR BASIN CIRCLE, CUDDALORE,

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COMPLIANCE REPORT

	Review Comments. *Detailed Project Report of MANIMUKTHANADHI Sub Basin (Rs. 1344.00 Lakhs) is reviewed in respect of technical aspects and our review comments are outlined in the following paragraphs*	
	1. TNIAMP in the Manimukthanadhi Sub Basin envisages rehabilitation & modernization of 34 Tank Systems (covering tank bunds, sluices, weirs), 10 Anicuts, 1.5 km Supply Channels of Anicuts and 38.65 km Supply Channels in the Tank Systems besides construction of 3 Artificial Recharge Well Structures and execution of OFD works. **Participatory Irrigation Management (PIM) Approach.** It is brought out It is mentioned in section 4.6, Page 53 of the Detailed Project Report that the farmers were duly involved in the preparation of "Scheme Modernization Plans" and, that, " Walk-Through Surveys" were carried out with the participation of farmers as well as the list of tasks proposed to be taken up for rehabilitation & modernization was discussed with 1205 farmers. As per Section 4.4, Page 52 of DPR, "Awareness Creation Program" was also carried out by the WRD officials by visiting all 38 villages in the Sub Basin and awareness about various activities contemplated under the project was created. *Thus, requirements of Participatory Irrigation Management have reportedly been fulfilled.*	---
	2.Rehabilitation & Modernization of Tank System. a) Standardization of Earthen Tank Bunds: i) Raising & Strengthening of 34 Tank Bunds of 45785 m total length to design sections, through placement and compaction of earth fill, involve 2,46,566.36 m3 earth work (as per Page 122 of DPR). Perusal of Tank Details given on Page 101 of DPR indicate that all the 34 tanks are of height less than 5 m. The height of these tanks varies from 3.4 m to 4.9 m. Accordingly, since the height of bunds is not more than 5 m, as per the Indian Standard Specifications IS 121691987 (General Guidelines For Embankment Sections), already furnished to WRD and MDPU, any soil from amongst the soils of engineering classification: GC, GM, SC, SM (Coarse	Analysis was carried out as per IS 12169/1987 and based on that type of soil is adopted for raising & strengthening of the 32 nos of tank Bunds. The water side slope and rear side slope for strengthening of bund is taken as 2(H): 1(V).The additional quantity of earth work for strengthening of bund is 233700.00 M^3 for an amount of Rs 1,80,48,673.40 . Necessary corrections involving above in cost is done in the cost table and enclosed in DPR volume-II . Page.No. 70

	grained soil) or CL, ML, CI, MI (Fine grained soil) or CH, MH (Fine grained soil) can be used for raising & strengthening of the tank bunds to design section through placement & compaction of such earth fill. However, use of CH soil (expansive / swelling clay of high plasticity) should preferably be avoided. The final water side slope as well as the rear side slope of the strengthened bunds has to be 2(H):1(V). In exceptional cases, the existing water side slope of 1.5 (H): 1(V) can be allowed in such tank bunds in which the revetment exists in good condition. The rear side slopes have essentially to be 2(H):1(V) for the tank bunds of height up to 5 m. For the tank bunds of height more than 5 m, side slopes will be governed by the type of soil used for the earth fill as is indicated in Indian Standard IS 12169-1987.	
	(ii) Cross Sections of Tank Bunds. It is noted that no cross sections of tank bunds, indicating existing profile of bunds super-imposed with the design profile and showing serrations / benches cut in the existing slopes, are appended in the DPR. It is also no where mentioned as to at what spacing cross-sections of the tank bunds were actually observed. In order to be sure and check / review that correct quantities of earth work are calculated and adopted in the estimate, it is essential that this requirement is fulfilled. In this context, cross sections of all the 34 tank bunds at the spacing at which actually observed, and duly superimposed with the proposed design section as well as the statement depicting the quantities of "cut"(serrations/benches cut in the side slopes) & "fill" should be included in a separate volume, marked Volume II DPR. MWL, TBL, side slopes, benches should be duly depicted in each cross section. DPR is not considered to be technically complete without fulfillment of this important requirement. MDPU to ensure compliance.	Out of 34 tanks, 32 tank bunds at the spacing at 200m interval which actually observed, and duly superimposed with the proposed design section as well as the statement depicting the quantities of "cut"(serrations/benches cut in the side slopes) & "fill" have been included in a separate volume, marked Volume II DPR. MWL, TBL, side slopes, benches have been duly depicted in each cross section. In Ka.Alambalam Tank, there is no provision made for Strengthening bund. In Peruvangur Tank, Jungle clearance and Fixing Boundary stone provisions only are made.
	(iii) Free Board Perusal of 'TANK DETAILS' on Page 101 of DPR indicates that out of 34 tanks to be raised & strengthened to design section, only 3 tank bunds have a design free board of 1.5 m and the other 31 tanks have a free board of only 1.0 m. It is satisfying to note that provision is indicated to have been made for increasing the free board to 1.5 m in these 31 tank bunds, thereby, fulfilling the free board requirement.	---

	(iv) Turfing on Rear (Downstream) Slopes of Tank Bunds. Perusal of Bill Of Quantities (6.8.1.Page 110) indicates that provision is made for turfing on the rear slopes of tank bunds. This fulfills the requirement of technical guidelines.	---
	(b) Rehabilitation / Repairs to Weirs in Tank Bunds. **(i) Repairs to Weirs.** As per 3.1, Pages 38 – 46: Hydraulic Particulars of Tanks including Supply Channels, there are 45 Weirs in 34 Tanks. There is only one weir in each of 26 Tanks; 5 Weirs in Alathur Tank; and 2 Weirs in each of the other 7 Tanks. Perusal of 6.6, Page 107: WRD Cost Table indicates that provision of Rs 60.08 lakhs is made for repairs to 7 Weirs. It is suggested that a brief explanatory Paragraph outlining the proposed repairs to be carried out in each of the 7 Weirs should be broadly included along with drawing or good sketch of each such Weir depicting the proposed repairs.	i) Drawings of each Weir depicting the proposed repairs are included in the DPR volume II page no. 45 – 51 ii) Following Repair works are proposed in the Weirs: **1.) Vadathorasalur** *Skin wall- 20 m *Abutment, wing wall and Return wall *D/s cut off wall I & II *D/s Apron I & II wearing coat- 20cm thk **2.) Chittalur** *Skin wall- 26 m *Abutment, wing wall and Return wall *D/s Apron I & II wearing coat- 15 cm thk **3.) Kudiyanallur** *Skin wall- 25 m *Abutment, wing wall and Return wall *D/s Apron I & II wearing coat- 15 cm thk **4.) Ninaiyur** *Skin wall- 25 m *Abutment, wing wall and Return wall *D/s Apron I & II wearing coat- 20 cm thk **5.) Udayanatchi** *Skin wall- 23 m *Abutment, wing wall and Return wall *D/s Apron I & II wearing coat- 15 cm thk **6.) Peruvangur** *Skin wall- 30 m *Abutment, wing wall and Return wall *D/s Apron I & II wearing coat- 15 cm thk **7.) Kachirayapalayam** *Skin wall- 46 m *Abutment, wing wall and Return wall *D/s Apron I & II wearing coat- 20cm thk

	(ii)Design Flood Discharge : Adequacy of Weirs to Safely Handle Design Flood Discharge. Particulars in respect of 'Free Catchment (sq km)'; Combined Catchment'; 'No. of Weirs'; 'Weir Length' and 'Discharge (Cusecs)' are tabulated in Pages 38 – 46 of DPR. *It is noted that adequacy of none of these Weirs to safely handle the design flood discharge has been determined / calculated*. Firstly, it is important to evaluate correct flood discharge for each Tank and, secondly, to determine the adequacy of Weir /Weirs to safely negotiate / handle the flood discharge and, thereafter, explore the best possible option to address the inadequacy of the particular Weir / Weirs and then make requisite / provisions for the modification of such Weir / Weirs in the cost estimate duly backed with drawings / sketches of modification. Such exercise has not been done. This is suggested to be done and appended in the DPR, as broadly brought out in the following paragraphs: **Design Flood Discharge.** It is mentioned in Section 6.1, Page 99 of DPR titled: Structural Status & Deficiencies in the System that *"This System is an old system **existing for more than 100 years** and, as such, requires rehabilitation"*. The System being reportedly 100 years old, it may be mentioned that the rainfall pattern might have changed during this long period. Changes in the Catchment area may also have occurred since the construction of the Tank System as much as a century ago. In this context, it shall be desirable that the "Maximum Design Flood" for each Tank System proposed to be rehabilitated is calculated afresh and then the adequacy of the existing surplus Weir / Weirs in the respective Tanks to safely negotiate the "Revised Design Flood" be assessed. Safety of each Tank Bund is important and, accordingly, the Weir/Weirs in each Tank Bund should be capable of safely negotiating the revised design flood. *It is accordingly suggested that C.D.O. should critically examine this important aspect concerning the correctness of the existing design flood values for the respective tanks and computation of revised design flood for the respective tanks in the context of the possible 'change of rainfall pattern' and 'change in the catchment areas' having occurred since the reported construction of the tanks some 100 years back.*	Report on MFD calculation of 7 Tanks have been calculated and enclosed in DPR volume-II Page.No. 57-63 SE(Designs) in the letter dt.29.12.2020 has reported that the length of weir for the 7 tanks are found to be safe and sufficient to dispose discharge based on the Rainfall intensity. Page.No. 65-67

	Action Point. *To summarize, Central Design Organization (C.D.O.) should be approached by WRD engineers and requested to critically examine the correctness of discharge values presently indicated for each Tank (tabulated in pages 38-46 of DPR) and compute revise ddesign flood / maximum design flood for the respective tanks, as warranted, and thereafter, determine the adequacy of each existing weir to safely pass this discharge. C.D.O. to also provide requisite designs / drawings of modification of all such weir / weirs which is /are determined to be inadequate to safely handle the revised design flood. The modified designs & all relevant calculations should be appended in the DPR. The Cost Estimate should include the cost of such modifications. (Computation of revised design flood/maximum design flood may first be taken up for the tanks in which the weirs (7 Nos) are proposed to be repaired).*	
	(c) Repairs to SLUICES. A total of 44 Sluices in the Tanks are proposed to be repaired at an estimated cost of Rs 253.47 lakhs. It should be made clear whether all the existing 44 sluices are to be repaired only or any of the existing sluices is to be reconstructed also. Drawing (issued by CDO) of Tank Sluice appended at Page 253 of DPR depicts "RCC Barrel" type Sluice. *Appending of this drawing somehow gives the impression that some sluices are to be re-constructed.* Furthermore, perusal of 6.8.1: Bill Of Quantities, Page 111, Item No. 9 indicates provision of 12367.05 m_3 earth work amounting to Rs 1076180.69 (Rs 10.76 lakhs), worded as: "Earthwork excavation for *cut opening* tank bund with initial lead .....as per the technical specifications." *The Tank Bund is required to be cut opened in case the existing sluice barrel is to be removed and replaced with a new barrel, which implies re-construction of the Sluice.* It , therefore, needs to be examined and clarified whether only repairs are to be carried out in the existing 44 Sluices or some of the existing Sluices are to be replaced with the construction of new Sluices for which "cut opening" of the concerned tank bunds" will be undertaken. *A brief Note should accordingly be appended in the DPR regarding this aspect and type of repairs proposed for the Sluices should be broadly outlined in the Note.*	A total of 44 Sluices in the Tanks are proposed to be reconstructed at an estimated cost of Rs 253.47 lakhs. It is submitted that all the existing 44 sluices are to be reconstructed only. the existing Sluices are to be replaced with the construction of new Sluices for which "cut opening" of the concerned tank bunds have been included *in the DPR*

	(d) Repairs to Body Walls of Weirs / Anicuts through Provision of Concrete Skin Wall. As per 6.6. WRD COST TABLE, Page 107, 7 Weirs are proposed to be repaired at an estimated cost of Rs 60.08 lakhs and, that, 10 Anicuts are envisaged to be repaired at an estimated cost of Rs 300.51 lakhs. Drawings of "skin wall concrete" are appended on pages 256 to 258 of DPR. It has not been mentioned whether "skin concrete" is to be provided on the upstream face of all 7 Weirs and on the upstream face of all 10 Anicuts. *A brief paragraph should, therefore, be included in the DPR indicating the nature of proposed re*pairs. Drawing, titled: "8.6 Repairs to Anicut (Skin Wall)" enclosed in Page 258 of DPR is not clear / not fully legible. It should be replaced with a better drawing. *Also, a Note be given below the drawing in page 257 and the drawing in page 258 to be worded as*: " Drill holes of 50 mm diameter (to be filled with 1:2 cement sand mortar and 16 mm anchor bars inserted) *should have an inclination of about 5 degree downward"* . This is essential to enable proper filling of holes with cement sand mortar. *Also, horizontal spacing of such holes be specified as 1.2 m.* In case, any Anicut/Anicuts is/are to be re-constructed, requisite designs/drawings should be obtained from Central Design Organization and be appended in the DPR.	I) Skin wall is proposed in upstream faces of all the 7 weirs . II) Drawing, titled: "8.6 Repairs to Anicut (Skin Wall)" enclosed in Page 258 of DPR is replaced with a better Visible drawing enclosed in DPR volume II page no. 52 III)Following Repair works are proposed in the Anicuts: **1.) Pootai Anicut** * Rough stone dry packing -d/s apron **2.) Pandalam Anicut** * Rough stone dry packing -d/s apron **3.) Chellampattu Anicut** * Rough stone dry packing -d/s apron **4.)Karadichithur Anicut** * Skin wall @ U/s body wall- 19 m *Retaining Wall - 35 m *u/s Apron - 20 m *River regrading *Flood bank- u/s both sides- 300m-1200m^3 **5.)Kumarapalayam Anicut** *D/s Cut off wall- 40 m *D/s Rough stone dry packing - 40 m *D/s Apron wearing coat - 40 m *River regrading *Shutter for sand vent and Regulator- 2 Nos **6.)Thavadipattu Anicut** * Skin wall @ U/s body wall- 90 m *Retaining wall- 32 m *D/s Cut off wall- 20 m *D/s Rough stone dry packing - 40 m *D/s Apron wearing coat - 40 m *River regrading *Flood bank for both u/s & d/s- 100m *Shutter for sand vent and Regulator- 2 Nos **7.)Pallagacherry Anicut** * Skin wall @ U/s body wall- 130 m *Retaining wall- 30 m *Apron wearing coat- 130m *River regrading *Flood bank for both u/s & d/s-

		4770m^3 *Shutters of size 1m to 2m - 2 Nos **8.)Panayangal Anicut** * Skin wall @ U/s body wall- 200m *Retaining wall- 30 m *Apron wearing coat- 200m *River regrading *D/s cut off wall- 200 m *Shutters of size 1m to 2m - 2 Nos **9.)Koothakudi Anicut** * Skin wall @ U/s body wall- 100m *D/s cut off wall- 35 m *Apron wearing coat- 35 m *Flood bank for both u/s & d/s - 100m-4500 m^3 *Retaining wall- 30 m *River regrading *Shutters of size 1m to 2m - 2 Nos **10.) Seshasamuthram Anicut** * Rough stone dry packing -d/s apron
	3. Improvement to Supply Channels. It is suggested that few typical design sections (duly dimensioned) of Supply Channels (Tank supply channels and Anicut supply channels) should be appended in the DPR depicting side slopes and free board also.	Design sections of Tank supply channels and Anicut supply channels are appended in the DPR volume II in page no. 53-55 regarding this aspect.
	4. Construction of 3 Artificial Well Structures – Ground Water Component (148.50 lakhs). It is satisfying to note that very well prepared and comprehensive write-up on this component is appended in the DPR. It covers the whole range of requisitely needed aspects including necessity of these recharge wells, lithology details, structural drawings approved by C.D.O, estimated quantities of required materials, detailed analysis of rates as well as detailed cost estimate etc.	---
	5 .Provision for OFD works. Provision of Rs 60.00 lakhs is made for this component as per 6.6. WRD COST TABLE, Page 107 of DPR. Ayacut is mentioned to be 2830.15 Ha. Based on the provision of Rs 2200 / Ha made in the Project Estimate for the OFD Works, provision for this component should be: Rs (2830.15 x 2200) = Rs 62.26 lakhs. Being a very important component for efficient delivery of water to the fields, provision for OFD works should not be reduced. Rather, it should	As per the suggestion the provision for OFD works has been increased to Rs. 62.26 Lakhs from 60.00 Lakhs is appended in DPR volume II page no. 7

	be increased, wherever possible. It is accordingly suggested that provision of Rs 62.26 lakhs should be made for this component as against Rs 60.00 lakhs presently *made.*	
	6. 6.8.1 Bill Of Quantities. Pages 110 – 121. **(i) Sl.No.3; Page 110.** In 10 th line, 'breaking clod' *be replaced with* 'breaking clods of size more than 75 cm.' **(ii) Sl. No. 9; Page 111.** This item envisages 'cut opening of tank bund' and involves earthwork quantity of 12367.05 m^3 . As per specifications, whenever the tank bund is to be 'cut opened' it should be cut opened to side slopes of 4(H):1(V). *Accordingly, it should* be worded as 'Earthwork excavation for cut opening tank bund to 4(H):1(H) slope with initial.....technical specifications'. *Also, correctness of the specified quantity of 12367.05m^3 should be checked to make sure that it is based on cut-opening of tank bunds to 4(H):1(V) slopes. If not, this quantity should be corrected & its cost revised.* **(iii) Sl.No. 20; Page 114-115.** Concerned 'Unit' is not mentioned. Under the column "Unit", it is written (One Number). The 'Unit' should be specified. **(iv) Sl.No.35; Page 120.** In the 4 th line, the wording be corrected to read as: '....and depositing the earth on bank *duly consolidated* including jungle clearance..... etc complete.' **(v) Sl. No. 36; Page 120.** In the 2nd line, , the wording be corrected to read as: '..... desilting channel to *design section* and forming bund on either side ..... bed width 3.00 m to 6.00 m'.	correction were carried out in Bill of Quantities 6.8.1 in S/no. 3 Page No. 21 Correction were carried out in bill of Quantities 6.8.1 in S/no. 9 page No. 23 Corrections were carried out and enclosed in DPR Volume II page no 23. 25 corrections were carried out and enclosed in DPR revised 6.8.1 Bill of Quantities S/no. 20 S/no. 21 and S/no. 22 and S/no. 23 Page No. 26. 27 Corrections were carried out in Revised DPR 6.8.1 Bill of Quantities S/no. 35 page No. 32 S/no. 36 in Revised DPR 6.8.1 Correction were carried out as specified in the remarks page No. 32

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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 for Rehabilitation and Modernisation under TNIAMP Phase III. In Manimuktha nadhi 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 Manimuktha nadhi 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 Original 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. 1344.00 lakhs**. Now the revised Detailed Project report has been prepared based on the compliance report and works out to **Rs. 1553.00 Lakhs**

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 conjective 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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(25.1.2021)

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 Manimuktha Nadhi 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. Reconstruction 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 Sub basin..

Rehabilitation works for 34 tanks

Standardization of Tank Bund for 45785.00 m.

Reconstruction of 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

6.4 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	59.61*	59.61	
9	koothakudi Anicut	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	137	51.19*	51.19	
10	Seshasamuthiram Anicut	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	2.41	2.41	
11	Peruvangur Tank	875	3.72	1	0.88	3	-	-	1	6.05	1	30	1	10.52	-	-	2100	1.17			22.34	
12	Thandalai Tank	1875	15.23	1	0.76	2	-	-	1	5.55	1	34.85	-	-	-	-	2500	1.49			23.03	
13	Thirukkanangur Tank	1800	14.00	2	1.56	2	-	-	2	12.30	1	23.4	-	-	-	-	1600	1.04			28.90	
14	Ka.Alambalam Tank	-	-	1	0.83	3	-	-	1	6.09	1	32	-	-	-	-					6.92	

15	Alathur Tank	5000	38.68	2	1.30	3	-	-	2	12.25	5	30, 35, 40, 25, 57.90	-	-	-	-	9600	3.77			56.00	
16	Chittalur Tank	1800	9.96	1	0.90	2	-	-	2	12.03	1	26	1	9.04	-	-	6300	1.87			33.80	
17	Kudiyanallur Tank	1400	10.55	1	0.80	2	-	-	1	6.22	1	25	1	9.71			1000	0.64			27.92	
18	Koothakkudi Tank	2200	12.46	1	0.76	3	-	-	1	5.99	1	25	-	-	-	-	2600	1.44			20.65	
19	Ninnaiyur Tank	1100	7.24	1	0.61	1	-	-	1	6.03	1	25	1	9.65	-	-	-	-			23.53	
20	Prithivimangalam	1650	14.01	2	1.30	3	-	-	2	10.62	1	52.40	-	-	-	-	1200	0.95			26.88	
21	Sithathur Tank	1000	9.18	2	1.29	2	-	-	2	11.70	1	36.5	-	-	-	-	2000	1.04			23.21	
22	Thyiyagai Tank	1100	8.99	1	0.65	1	-	-	1	4.36	1	75	-	-	-	-	1600	0.99			14.99	
23	Udayamampattu Tank	1300	6.78	1	0.78	1	-	-	1	5.80	1	50	-	-	-	-	750	0.67			14.03	
24	Udayanatchi Tank	750	4.64	1	0.84	2	-	-	2	11.70	1	23	1	8.67	-	-	1200	1.02			26.87	
25	Vada Thorasalur Tank	2200	12.72	1	0.82	2	-	-	2	12.34	1	20	1	7.51	-	-	-	-			33.39	
26	Pallagacherry Tank	2400	17.74	1	0.63	12	-	-	8	15.83	1	80	-	-	-	-	6200	3.14			37.34	
27	Kalayanallur Small Tank	760	12.62	2	1.86	1	-	-	-	-	1	9	-	-	-	-	-	-			14.48	
28	Kalayanallur Tank	1150	14.03	2	1.85	1	-	-	1	8.39	1	10	-	-	-	-	-	-			24.27	
29	Chellampattu Tank	1200	13.16	2	1.58	1	-	-	1	8.43	1	20	-	-	-	-	-	-			23.17	
30	Kosapadi Tank	1150	15.06	2	1.57	2	-	-	1	8.45	1	20.5	-	-	-	-	-	-			25.08	
31	Manjaputtur Tank	1100	22.90	2	1.55	3	-	-	1	8.54	2	20, 17.8	-	-	-	-	-	-			32.99	
32	Pandalam Tank	1400	24.42	2	1.54	4	-	-	1	8.46	1	40. 90	-	-	-	-	-	-			34.42	
33	Poikunam Tank	1050	15.95	2	1.59	2	-	-	1	8.45	2	20, 8	-	-	-	-	-	-			25.99	
34	Pootai Tank	1080	25.82	2	1.54	2	-	-	1	8.46	2	20, 25	-	-	-	-	-	-			35.82	
35	Sembarampattu Tank	1200	13.58	2	1.54	2	-	-	2	8.49	2	16, 14	-	-	-	-	-	-			23.61	
36	Urangani Tank	1100	24.74	2	1.55	2	-	-	1	8.44	2	28, 20	-	-	-	-	-	-			34.73	
37	Vadachettiyandal	1080	20.30	2	1.54	2	-	-	1	8.51	2	16.5,12	-	-	-	-	-	-			30.35	
38	Kallaerikuppam Tank	740	10.55	2	1.83	2	-	-	-	-	1	8	-	-	-	-	-	-			12.38	
39	Palaya SiruvangurPeriya	1065	14.67	2	1.53	2	-	-	1	8.65	1	14.5	-	-	-	-	-	-			24.85	

	Eri																					
40	Palaya korakachandal Tank	700	10.44	2	1.82	1	-	-	-	-	1	18.3	-	-	-	-	-	-			12.26	
41	Pallipattu Tank	1120	13.80	2	1.83	2	-	-	-	-	1	10	-	-	-	-	-	-			15.63	
42	Velanmandal Tank	980	12.15	2	1.45	2	-	-	-	-	1	27.5	-	-	-	-	-	-			13.60	
43	Kacharayapalaya m Tank	1260	13.77	1	0.65	3	-	-	1	7.67	1	46	1	4.98	-	-	-	-			27.07	
44	Vadakanandal Kalleri Tank	1200	13.58	1	0.65	4	-	-	1	7.67	1	15	-	-	-	-	-	-	1	6.14	28.04	
	Total	45785	477.44	56	42.18	82	-	-	44	253.47	44	812.7	7	60.08	0	0	40150	20.22	1032	300.81	1154.20	

*Anicut repair including skin wall , Apron, wearing coat, Cutoff wall, Strengthning of Flood bank.

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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	NO.	Amount in Lakhs	
1	Package No I	2830.15	34/10	45785	477.44	56	42.18	82	-	-	44	253.47	44	-	7	60.08	-	-	4050	20.22	10	300.81	1154.20
2	Provision for GST(12%)																						138.50
3	Provision for Petty Supervision Charges, Charges for Contingencies and Unforeseen items, advertisement charges, Photographic Charges, documentation Charges (2.5%)																						32.00
4	Provision for Labour Welfare Fund (1%)																						13.24
5	Provision for OFD works including field channel lining & measuring devices																						62.26
6	Provision for Environmental component																						7.00
7	Provision for Ground water component																						145.80
	TOTAL																						1553.00

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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	519.62
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	300.81
6	Improvements to Anicut Supply Channel	Km	1.5	0.99
	TOTAL (Tank & Anicut)			**1154.20**
7	Provision for GST@ 12%			138.50
	SUB TOTAL (A)			**1292.70**
8	Provision for Petty Supervision Charges, Charges for Contingencies and Unforeseen items, advertisement charges, Photographic Charges, documentation Charges @2.5%			32.00
9	Provision for Labour Welfare Fund @ 1%			13.24
10	Provision for OFD Works including field channel lining & measuring device			62.26
11	Provision for Environmental component			7.00
12	Provision for Ground water component			145.80
	SUB TOTAL (B)			**260.30**
	Grand Total (A+B)		-	**1553.00**

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25/1/21
Chief Engineer, PWD/WRD.,
Chennai Region,
Chepauk, Chennai.

25.1.21

25.1.21

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.	**1400.20**
	Environmental Component	7.00
	Ground Water Component	145.80
	TOTAL	**1553.00**

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6.7. PACKAGE ABSTRACT

Sl. No.	Description	Amt in Lakhs	Remarks
I	**CIVIL WORKS**		
1	Package No.1	**1152.41**	
2	**Provision for GST 12%**	**138.50**	
	TOTAL (A)	**1292.70**	
II	**L.S.Provisions**		
1	Provision for Petty Supervision Charges, Charges for Contingencies and Unforeseen items, advertisement charges, Photographic Charges, documentation Charges @2.5%	32.00	
2	Provision for Labour Welfare Fund @ 1%	13.24	
III	**OFD WORKS**		
1	Field Channel and Measuring device	62.26	
	Total	**1400.20**	

29.12.2020

Assistant Engineer, PWD/WRD.,
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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 of size more than 75 cm 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 compaction complete as per specifications etc., complete as directed by the Engineer-in-charge	**367220.00** (Three Lakh Sixty Seven Thousand and Two Hundred Twenty only)	1 M^3 (One Cubic Metre)	**77.79** (Rupees seventy Seven paise Seventy Nine only)	**28566043.80**
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	1 M^3 (One Cubic Metre)	**5.40** (Rupees five paiseForty only)	**653669.95**

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
		Nine Nineonly)			
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 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.	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**
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**

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
9	Earthwork excavation for cut opening tank bund to 4(H):1(V) slope 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 away plain cement concrete as directed by the Engineer in charge of the works as per technical Specification cement concrete	**247.01** (Two hundred and forty seven point Zero one only)	1 M^3 (One Cubic Metre)	**332.00** (Rupees Three Hundred and Thirty Two only)	**82007.32**
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 M^3 (One Cubic Metre)	**79.81** (Rupee Seventy Nine Paise Eighty One only)	**166348.78**

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
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 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	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
	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 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 M^3 (One Cubic 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 M^3 (One Cubic 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	**1971.28**	1 M^3	**8245.02**	**16253243.03**

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
	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.	(One Thousand Nine Hundred and Seventy One Point Two Eight only)	(One Cubic Metre)	(Rupee Eight Thousand Two Hundred and Forty Five PaiseTwo only)	
20	Supplying, fabricating and placing in 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)	1 Qtl (One Quintal)	**6886.61** (Rupee Six Thousand Eight Hundred and Eighty Six Paise Sixty Six only)	**3612302.41**
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	**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**

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
	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.				
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)	1 M^3 (One Cubic 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 65x65x8mm 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 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	**21.45** (Twenty One point four five only)	M^2 (One Square 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
	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)	M^2 (One Square 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 Holdfast of size 25x25x6mm Mild Steel Angle 2 Nos on each side and including petty civil works and painting with one coat of Anticorrosive	**259.54** (Two Hundred and Fifty Nine Point Five Four only)	RM (Running Metre)	**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
	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)	RM (Running 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** (Thirty only)	RM (Running 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	**175.50** (One Hundred and seventy Five point five Zero only)	RM (Running 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
	fabricating and hoisting				
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)	RM (Running 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.,	**43.00** (Forty Three only)	1 No (One Number)	**19768.00** (Rupee Nineteen Thousand Seven Hundred and Sixty Eight only)	**850024.00**

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
	complete.				
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 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.	**10.00** (Ten only)	1 No (One Number)	**25853.00** (Rupee Twenty Five Thousand Eight Hundred and Fifty Three only)	**258530.00**
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 (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	**374.90** (Three Hundred and Seventy Four	1 M^3 (One Cubic	**6614.94** (Rupee Six Thousand Six	**2479941.01**

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
	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 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.	Point Nine only)	Metre)	Hundred and Fourteen paise Ninety Eight only)	
35	Earth work deploying earth moving machineries for desilting channel and forming bund on either side and depositing the earth on bank duly consolidated including jungle clearance etc., complete. Having bed width upto 3.00 m.	**51900.00** (Fifty One Thousand and Nine Hundred only)	1 M^3 (One Cubic Metre)	**26.85** (Rupee twenty six paise eighty five	**1393515.00**
36	Earth work deploying earth moving machineries for desilting channel to design section 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 3.00 m. to 6.00 m	**3000.00** (Three Thousand only)	1 M^3 (One Cubic Metre)	**32.95** (Rupee Thirty Two Paise Ninety Five only)	**98850.00**

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
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. complete (Narrow excavation)	**512.00** (Five Hundred and Twelve only)	1 M^3 (One Cubic Metre)	**149.85** (Rupee One Hundred and Forty Nine paise Eighty Five only)	**76723.20**
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.	**1420.00** (One Thousand Four Hundred and Twenty only)	1 hr (One Hour)	**1200.00** (Rupee One Thousand and Two Hundred only)	**1704000.00**
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	**385.00** (Three hundred and eighty five	1 hr (One	**333.89** (Rupee Three Hundred and Thirty	**128547.65**

Sl. No	Description of work	Quantity	Unit	Rate in Figures and Words	Amount
	specifications and as directed by the departmental officers.	only)	Hour)	three paise eighty nine only)	
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)	RM (One Running Metre)	**161.00** (Rupee One Hundred and Sixty one only)	**146510.00**
	Total				**115419719.41**

29.12.2020

Assistant Engineer, PWD/WRD.,
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Sankarapuram.

29.12.20

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

29/12/2020

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

29/12/20

Superintendting Engineer, WRD.,
Vellar Basin Circle,
Cuddalore - 607 001

29/12/20

CHIEF ENGINEER, WRD., PWD.,
CHENNAI REGION, CHENNAI - 5.

6.8.2 Calculation of Machineries Requirement

MANIMUKTHA NADHI SUB BASIN

Hydraulic excavator

Tippers	10	Nos	
working hour=	10	Hours / Day	
	2	loads/ hour	
1 trip of quantity=	4	m^3/ trip	
For 1 day=	800	m^3 /Day	
For 1 month=	25	Working days	
	20000	m^3	

Total quantity of earth work = 480266.36 $\frac{480266.36}{20000.00}$ 24 Months

Working period for earth work= 24 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	$\frac{6659.91}{450} = 15$
Months required to complete	**8**	months	

Concrete works=

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

$$= \frac{625}{20} = 31.5 \text{ Lorries/month}$$

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

A. Narayanan 29.12.2020

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

29.12.2020

Assistant Executive Engineer, PWD/WRD.,
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Kallakurichi.

29/12/2020

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

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	126300	9458607	296982.05	22240986	423282.05	31699593
	Total		9946222		23412086		33358308
	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

29.12.2020

Assistant Engineer, PWD/WRD.,
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29.12.2020

Assistant Executive Engineer, PWD/WRD.,
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29/12/2020

Executive Engineer, PWD/WRD.,
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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			55000			71300	42590	42590	42590	42590	42590	42150				41882.05		423282.05
																			480266.36
	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

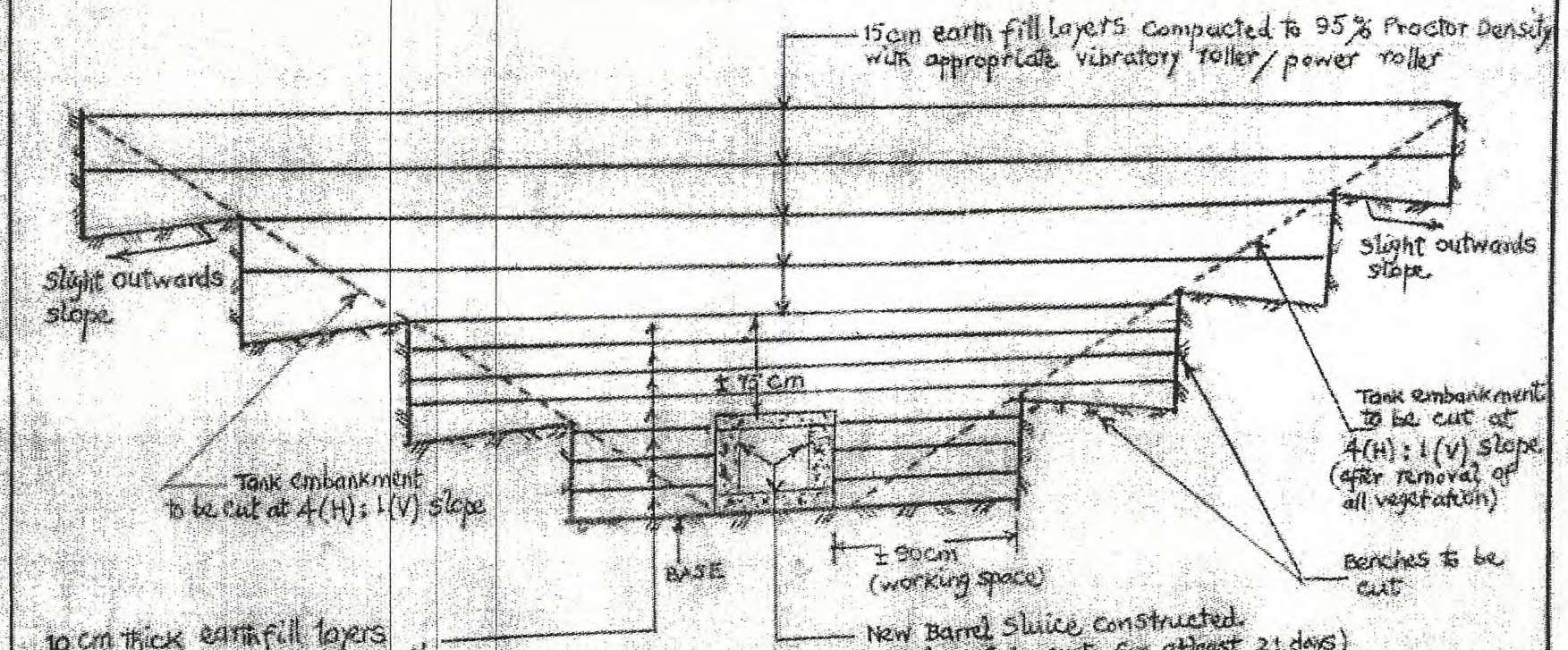
A. Nagarajan 29.12.2020
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9. DRAWINGS

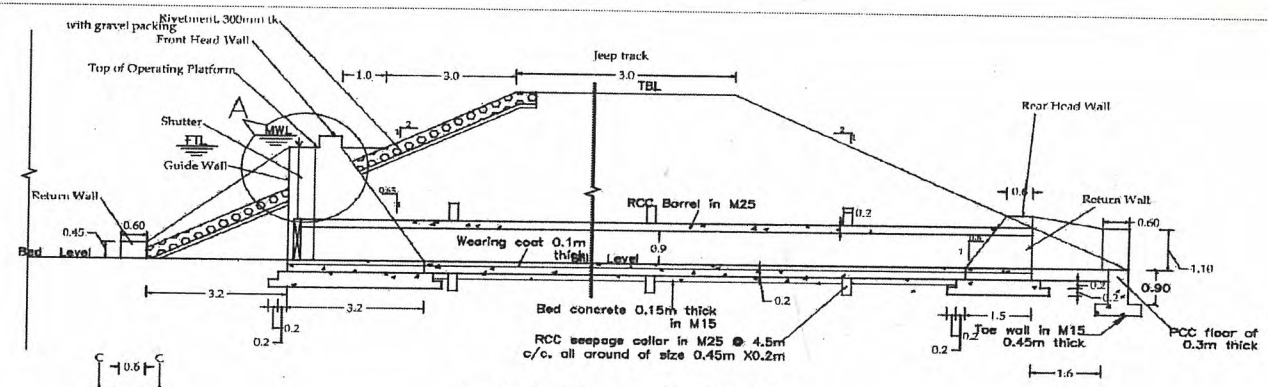
TYPICAL SKETCH



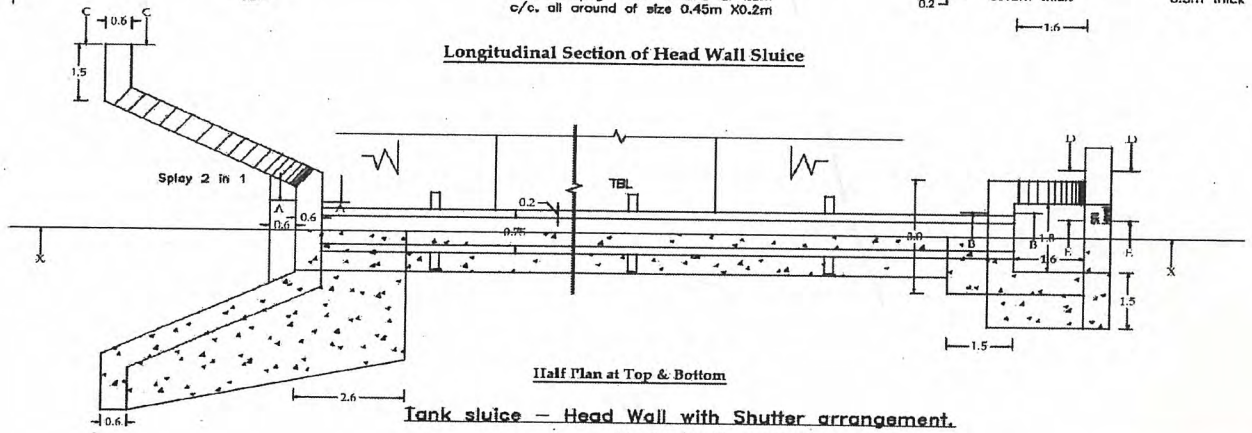
NOTES (i) The Base MUST be made smooth & hard, duly compacted with compactors / pneumatic tampers.
(ii) Earth fill compaction adjoining the Barrel and Benches should be compacted by mechanical / pneumatic tampers to ensure effective compaction.
(iii) Earth obtained from "benching" be reused (after removal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

RECONSTRUCTION OF SLUICES

9.4. Reconstruction of 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 (SDD)	IAMWARM –II – TYPICAL DRAWING FOR TANK SLUICE
Verified by Er.AMELIA BALRAJ, EE(SDD)	
Recommended by Er. K. BALAIYA, SE(D)	DESIGNED DRAWING OF TANK SLUICE
Approved by Er. S.THINAKARAN, CE(PF)	Head Wall with Shutter arrangement Typical Type – 3
DWG.NO: / 2016	SCALE 1 : 100

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

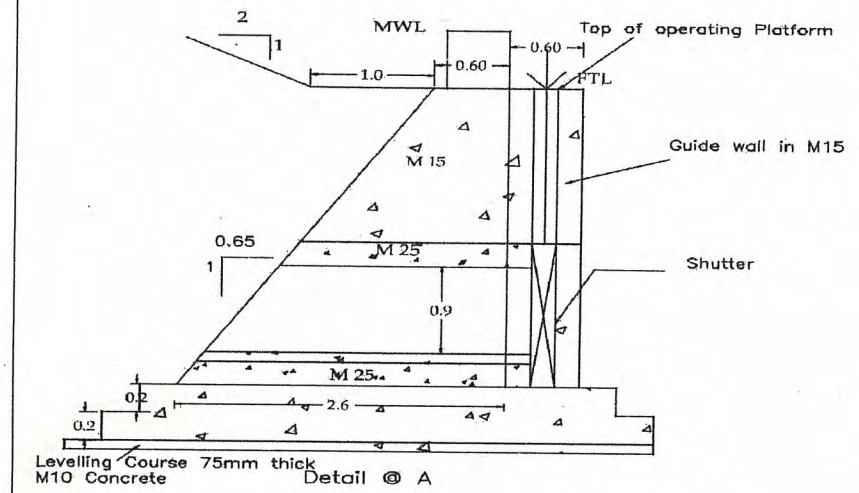
43

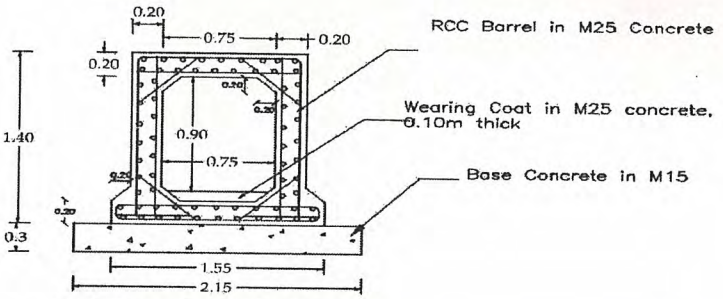
A. Narayanan 29.12.2020
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Irrigation Section,
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Vellar Basin Sub Division,
Kallakurichi.

TNIAMP PHASE III – Typical drawing for Tank Sluice

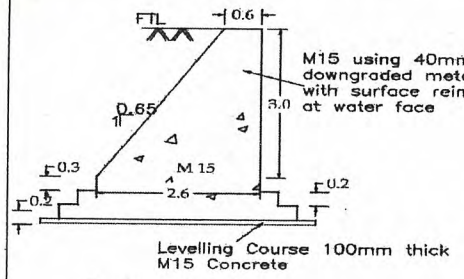
29/12/2020
Executive Engineer, PWD/WRD.,
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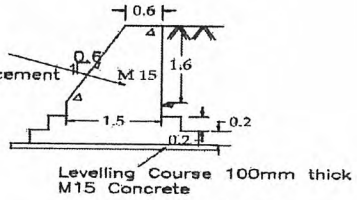


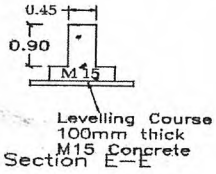


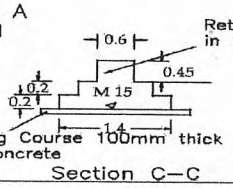
Details of RCC Barrel

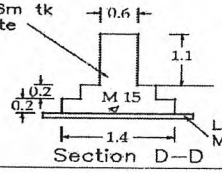
REINFORCEMENT DETAILS FOR SLUICE BARREL								
	Diameter	Spacing					Diameter	Spacing
Bottom Slab			Top Slab			Side Wall		
Main rod (Bottom thro)	12mm	200mm	Main rod (Bottom thro)	12mm	200mm	Main rod (Earth face)	12mm	200mm
Main rod (Top thro)	12mm	200mm	Main rod (Top thro)	12mm	200mm	Main rod (Water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











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, EE(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) Lr No: SE(SDD) / AEE –I (SDD)/ F /2016-I Dtd . . 2016 / CE / SE(D) /

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

29/12/2020

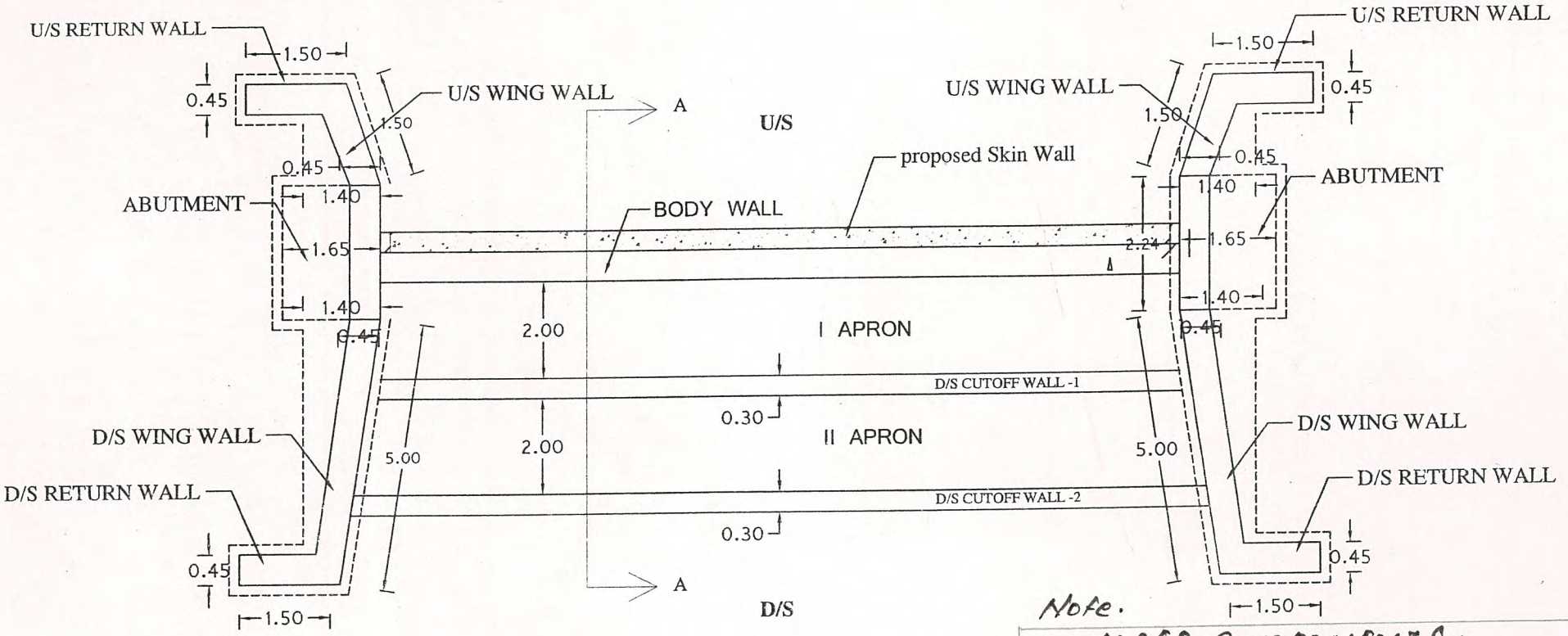
Assistant Executive Engineer, PWD/WRD.,
Vellar Basin Sub Division,
Kallakurichi.

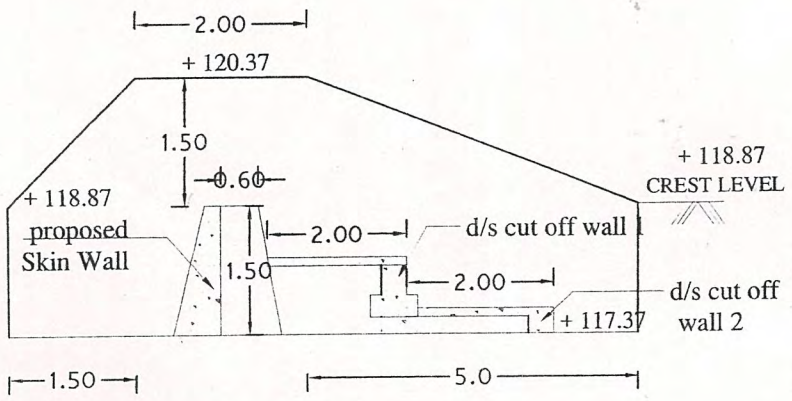
29/12/2020

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

44

PERUVANGUR TANK WEIR





CROSS SECTION @ A-A

Note.

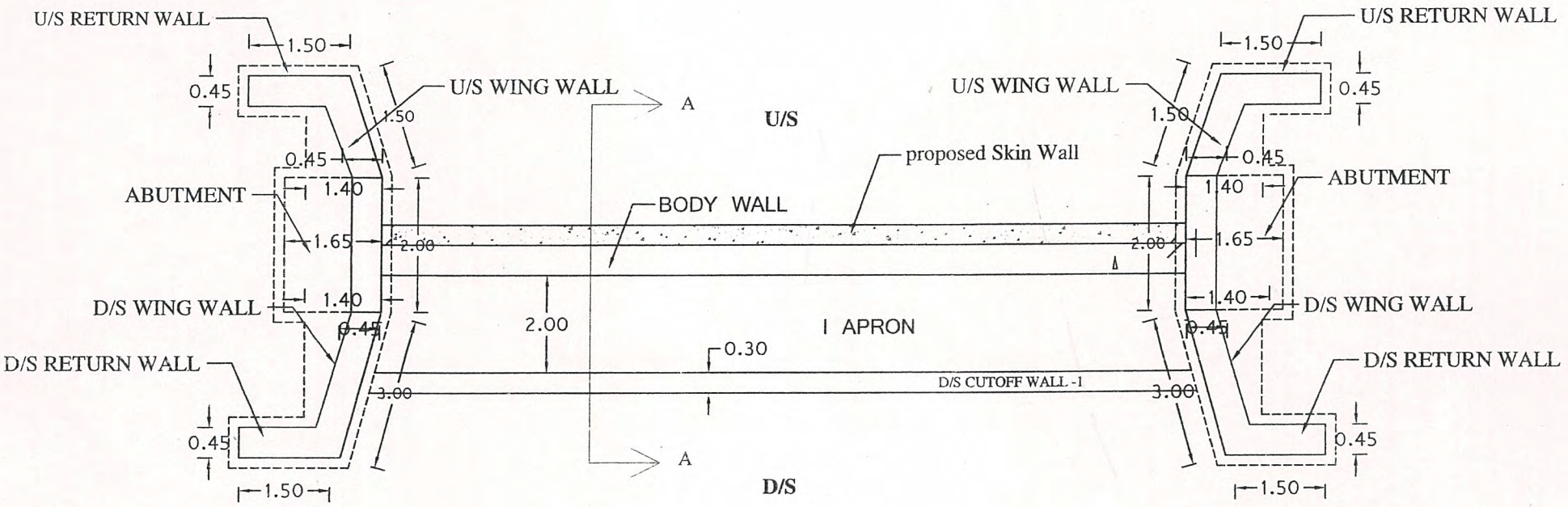
PROPOSED COMPONENTS.

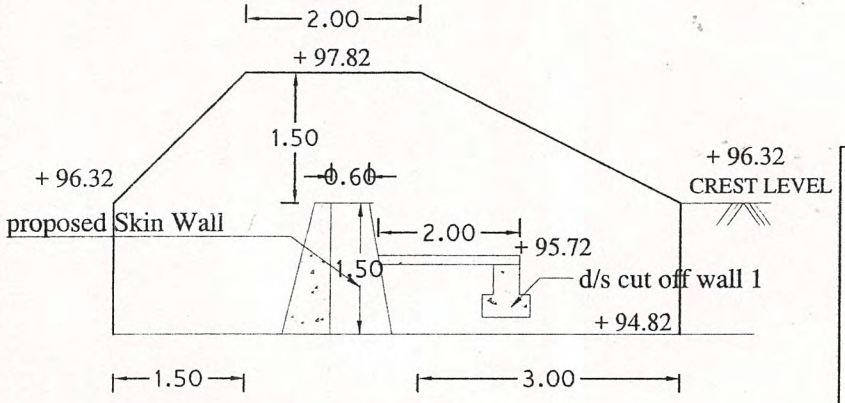
1. SKIN WALL. @ 30cm.
2. ABUTMENT WING & RETURN WALL.
3. D/S CUT OFF WALL. I & II.
4. D/S APRON. 2 @ 15 cm THICK.

Asst.Engineer ,PWD,WRD	Asst.Exe.Engineer,PWD,WRD	Executive Engineer,PWD,WRI
Irrigation Section	Vellar Basin Sub Division	Vellar Basin Division
Kallakurichi	Kallakurichi	Vridhachalam

24/12/2002

CHITTALUR TANK WEIR





CROSS SECTION @ A-A

Note.

PROPOSED COMPONENTS.

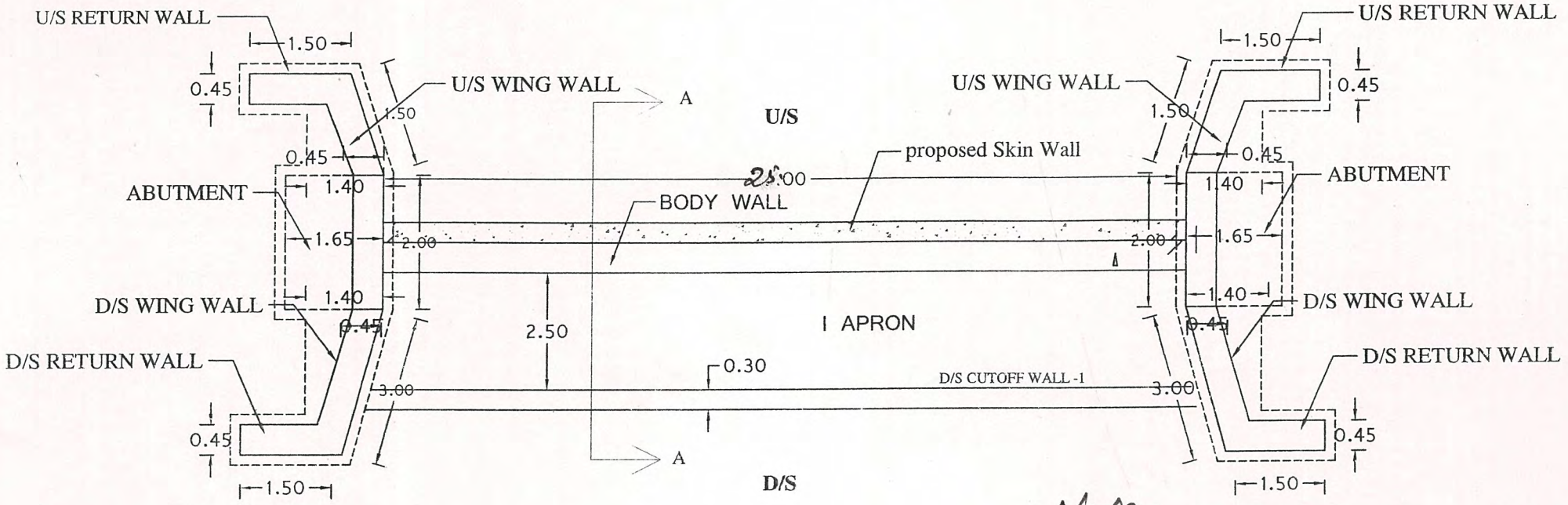
1. Skin wall. 26m.
2. Abutment wings or return wall.
3. D/S apron I.
4. wearing coat 15 cm TK.

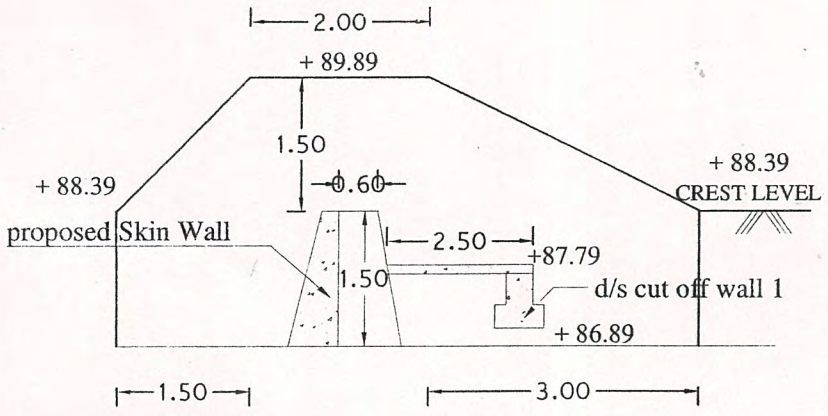
S. Venkatesan 24/12/2020
Asst.Engineer ,PWD,WRD
Irrigation Section
Kallakurichi

24/12/2020
Asst.Exe.Engineer,PWD,WRD
Vellar Basin Sub Division
Kallakurichi

24/12/2020
Executive Engineer,PWD,WRI
Vellar Basin Division
Vridhachalam

KUDIYANALLUR TANK WEIR





CROSS SECTION @A-A

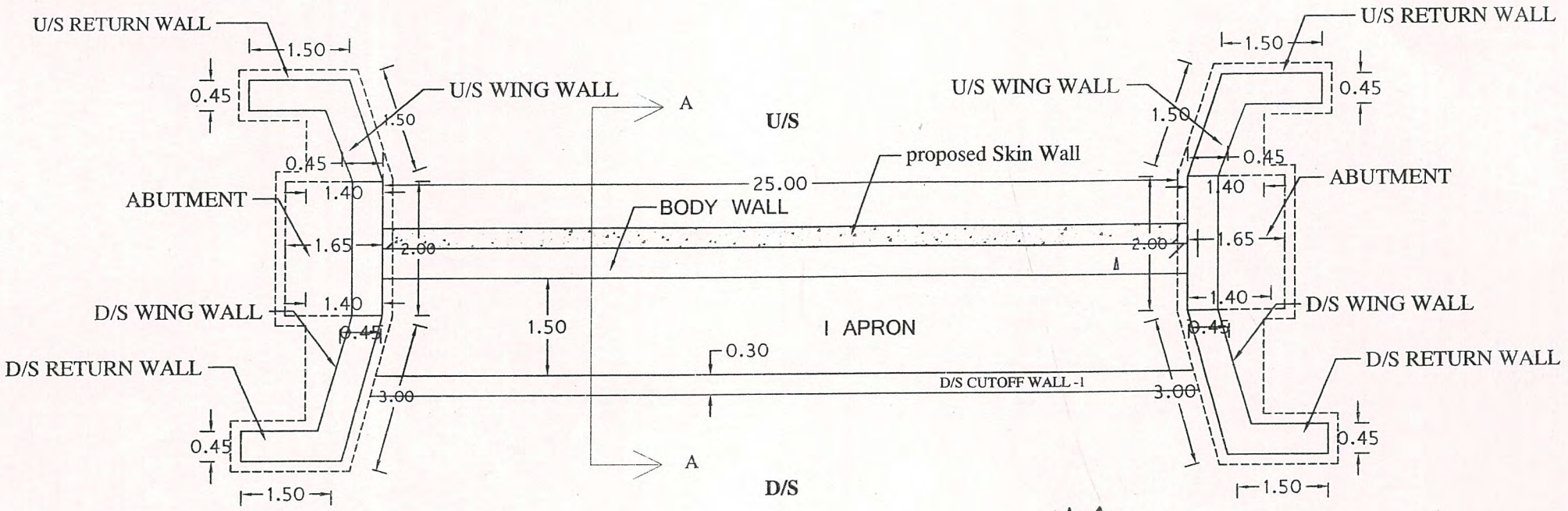
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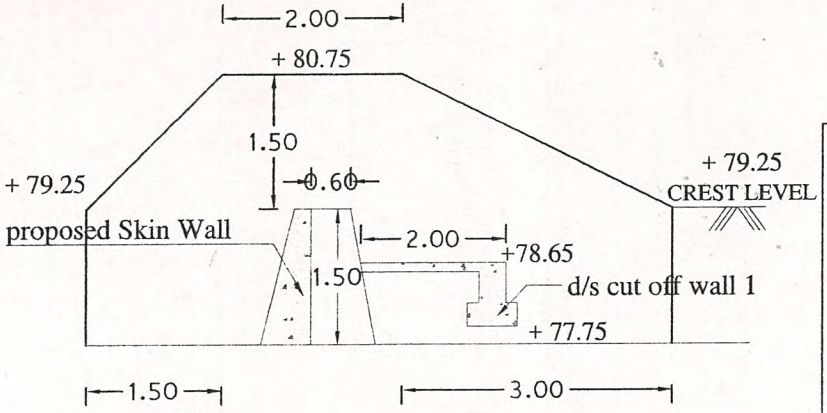
PROPOSED Components:

1. Skin wall 25 m
2. Abutment wing wall & return
3. D/s. apron I.
4. Weeping bar 15 cm Dia.

Asst.Engineer ,PWD,WRD	Asst.Exe.Engineer,PWD,WRD	Executive Engineer,PWD,WRI
Irrigation Section	Vellar Basin Sub Division	Vellar Basin Division
Kallakurichi	Kallakurichi	Vridhachalam

NINNAIYUR TANK WEIR





CROSS SECTION @ A-A

Note:

PROPOSED COMPONENTS.

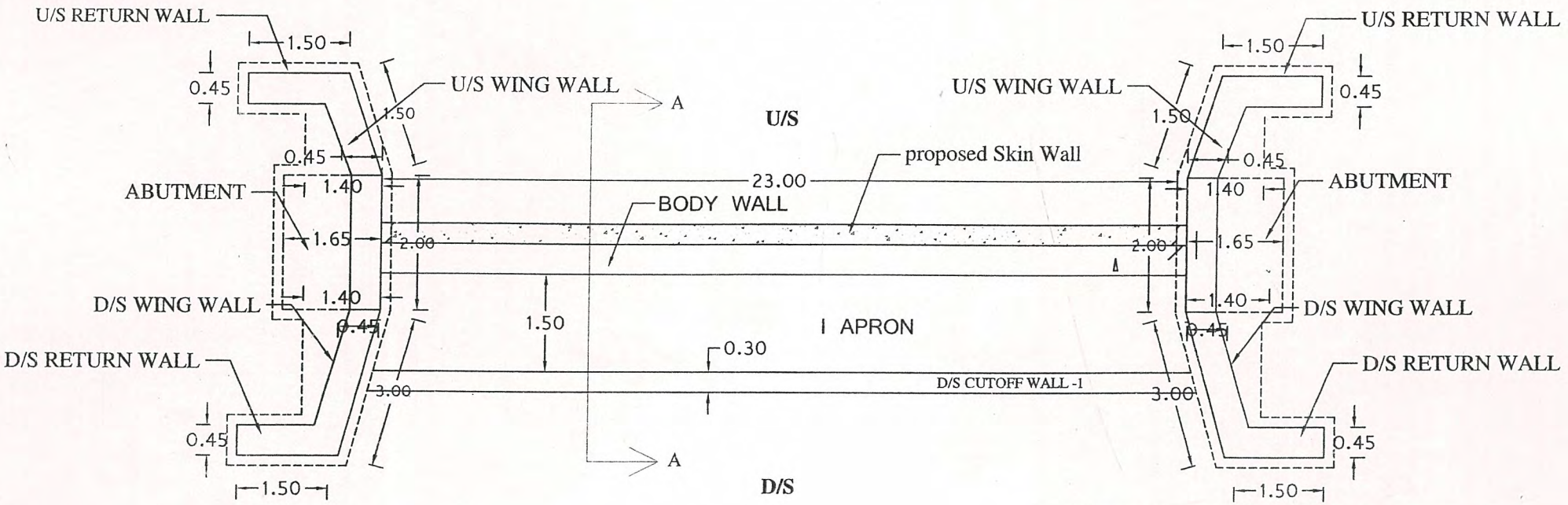
1. Skin wall. 25 m.
2. Abutment wing & return
3. D/S apron 1.
4. wearing coat 20 cm thk.

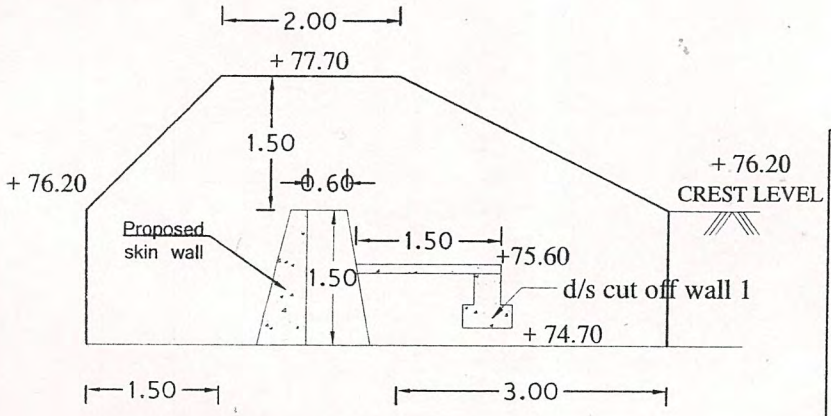
Asst.Engineer ,PWD,WRD
Irrigation Section
Kallakurichi

Asst.Exe.Engineer,PWD,WRD
Vellar Basin Sub Division
Kallakurichi

Executive Engineer,PWD,WRI
Vellar Basin Division
Vridhachalam

UDAYANATCHI TANK WEIR





CROSS SECTION @ A-A

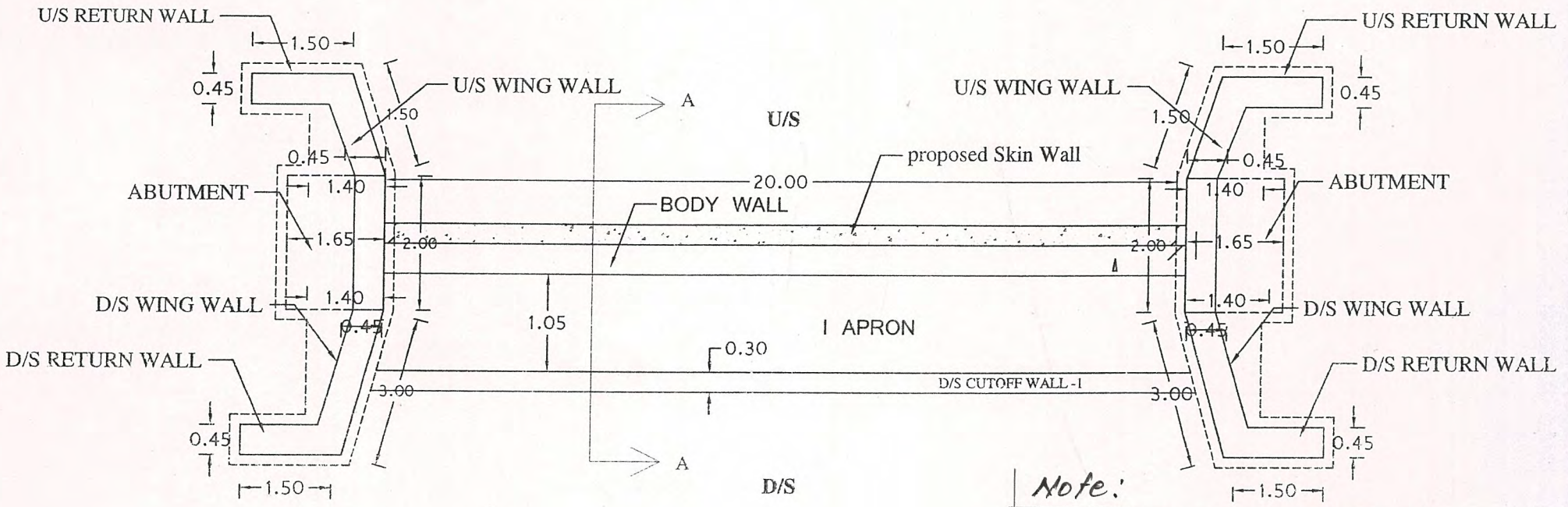
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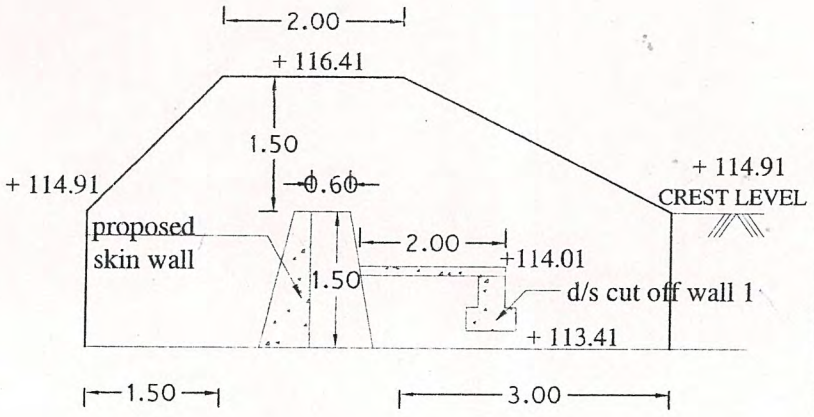
PROPOSED COMPONENTS.

1. SKIN WALL. 2 Nos.
2. ABUTMENT WING & RETURN.
3. D/S CUT OFF WALL
4. D/S APRON 2 15 cm etc.

Asst.Engineer ,PWD,WRD	Asst.Exe.Engineer,PWD,WRD	Executive Engineer,PWD,WRI
Irrigation Section	Vellar Basin Sub Division	Vellar Basin Division
Kallakurichi	Kallakurichi	Vridhachalam

VADATHORASALUR TANK WEIR





CROSS SECTION @ A-A

Note:

PROPOSED COMPONENTS.

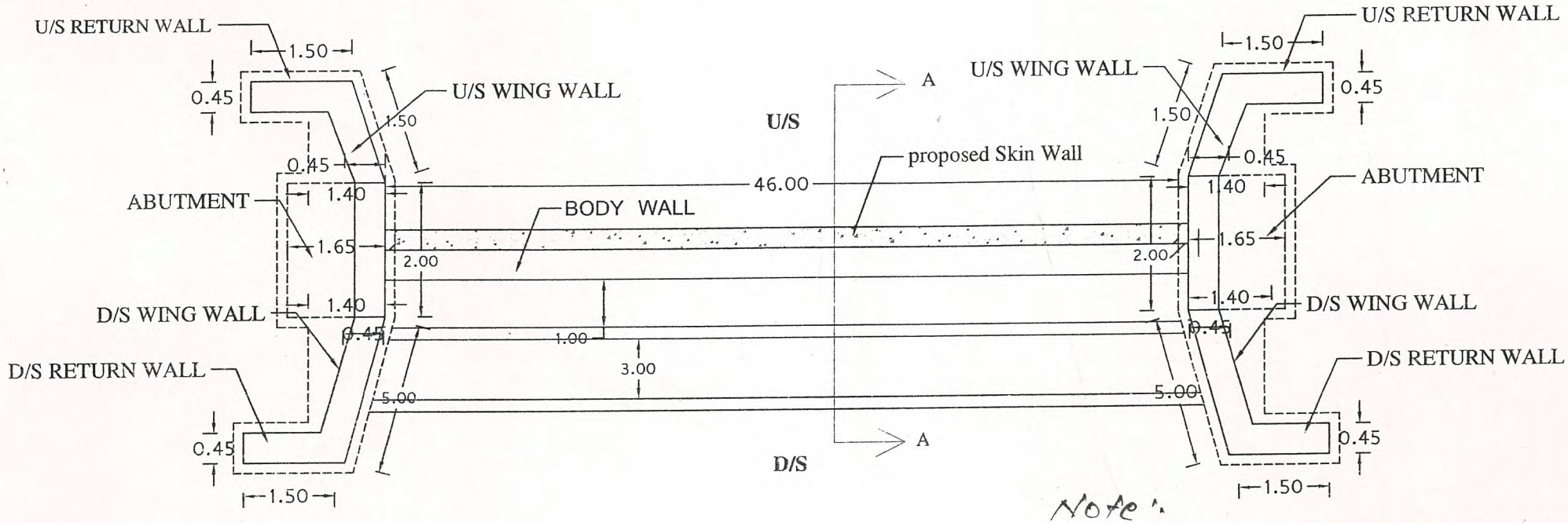
1. Skin wall. 20m
2. Abutment wing & return wall
3. D/S cut off wall. 1.
4. D/S apron 1
5. Pitching coat 2.5m thick.

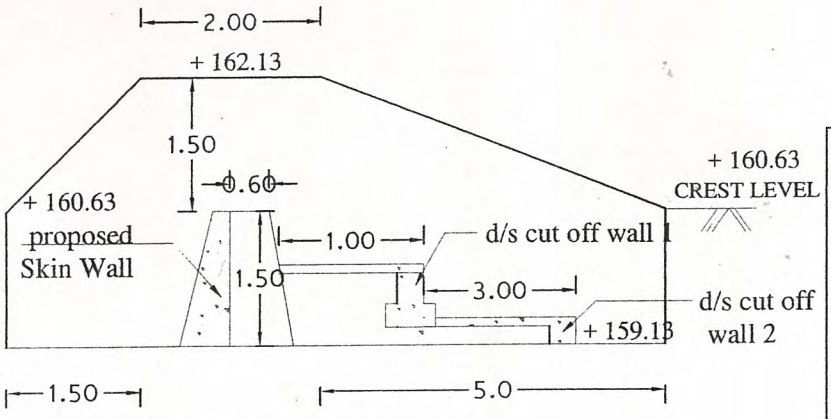
S. Venkatesan 24/12/2020
Asst.Engineer ,PWD,WRD
Irrigation Section
Kallakurichi

24/12/2020
Asst.Exe.Engineer,PWD,WRD
Vellar Basin Sub Division
Kallakurichi

24/12/2020
Executive Engineer,PWD,WRI
Vellar Basin Division
Vridhachalam

KACHIRAYAPAYAM TANK WEIR





CROSS SECTION @ A-A

Note:

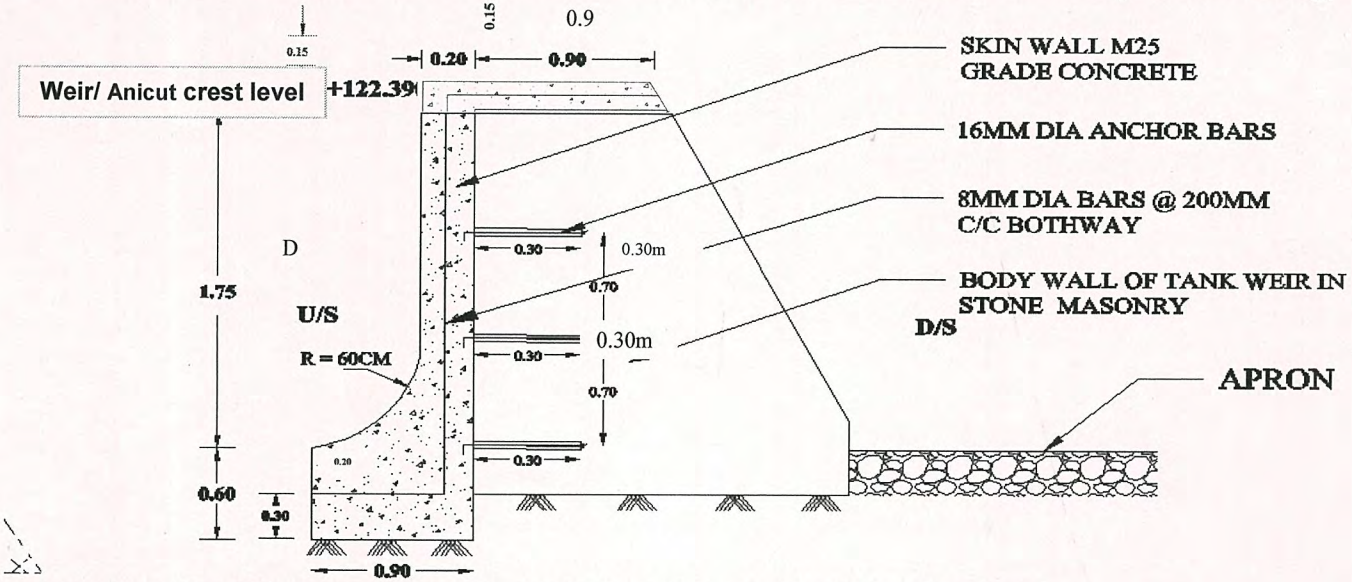
PROPOSED COMPONENTS:

1. Skin wall 46m.
2. Abutment wing & return wall
3. D/S apron I & II
4. Wearing coat - 20 cm thick.

Asst.Engineer ,PWD,WRD GNP Dam Section GNP Dam	Asst.Exe.Engineer,PWD,WRD Vellar Basin Sub Division Kallakurichi	Executive Engineer,PWD,WRI Vellar Basin Division Vridhachalam
24/12/20	24.12.2020	24/12/2020

9.6 Typical Cross Section of Skin Wall (Weir/Anicut)

TYPICAL CROSS SECTION OF SKIN WALL (Weir Repair)



1. joints on u/s surface to be raked to 25mm depth & surface roughened by chipping.
2. Doll - holes of 50 mm to be filled with 1:2 mortar and 16mm anchor bars to be pushed in. The roughened surface to be kept we for 72hours & cement slurry (1:2) of 0.70 water-cement ratio be applied over the surface prior to placement of skin concrece
3. Cement concrete of M20 Grade concrete is to be used with 20 maximum aggregate size.
4. Curing is to be done for 21 days
   Thickness of skin concrete. 15cm top & 20cm at bottom for anicut of height upto 1.50m and 20cm at top & 30cm at bottom for anicuts of height more than 1.50m
5. Drill holes of 50mm dia Inclined at 5 degree downward to ensure that these get properly filled with cement -sand mortar
6. Horizontal spacing of these holes may be kept at 1.2 m

A. Nargana 29.12.2020

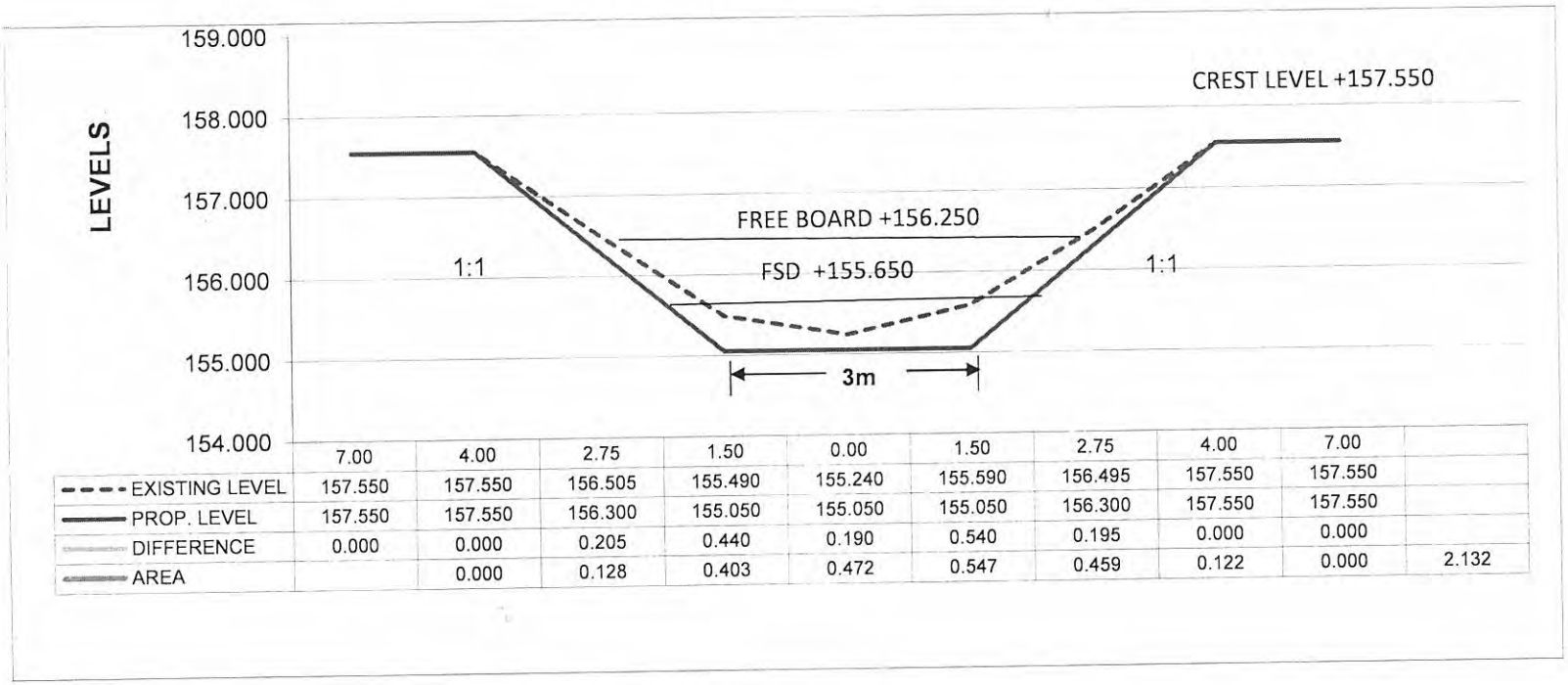
Assistant Engineer, PWD,WRD,
Irrigation section,
Sankarapuram.

Assit. Executive Engineer, PWD, WRD(i/c),
Vellar Basin sub Division,
Kallakurichi.

29/12/2020

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

KUMARAPALAYAM ANICUT SUPPLY CHANNEL

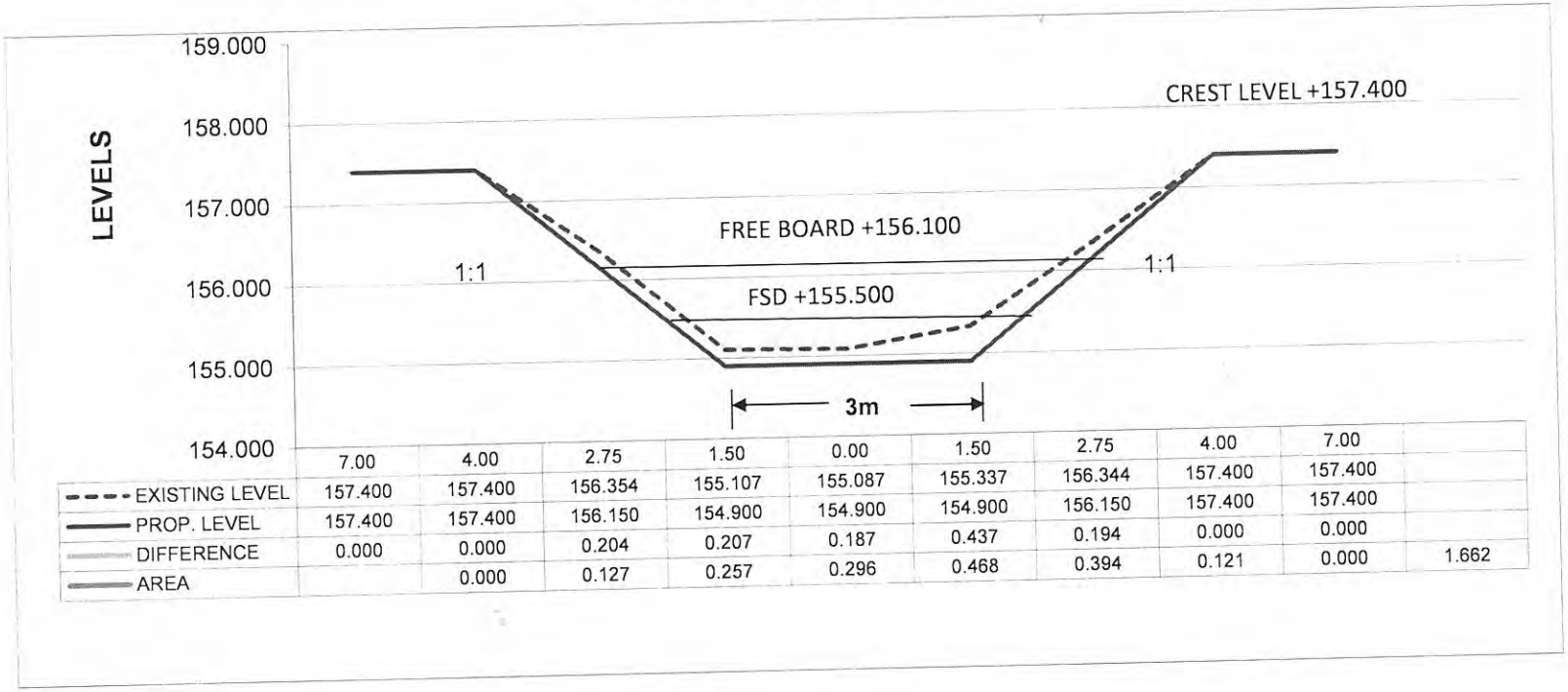


	7.00	4.00	2.75	1.50	0.00	1.50	2.75	4.00	7.00	
EXISTING LEVEL	157.550	157.550	156.505	155.490	155.240	155.590	156.495	157.550	157.550	
PROP. LEVEL	157.550	157.550	156.300	155.050	155.050	155.050	156.300	157.550	157.550	
DIFFERENCE	0.000	0.000	0.205	0.440	0.190	0.540	0.195	0.000	0.000	
AREA		0.000	0.128	0.403	0.472	0.547	0.459	0.122	0.000	2.132

C.S @ 0

AE/WRD Dam

KUMARAPALAYAM ANICUT SUPPLY CHANNEL

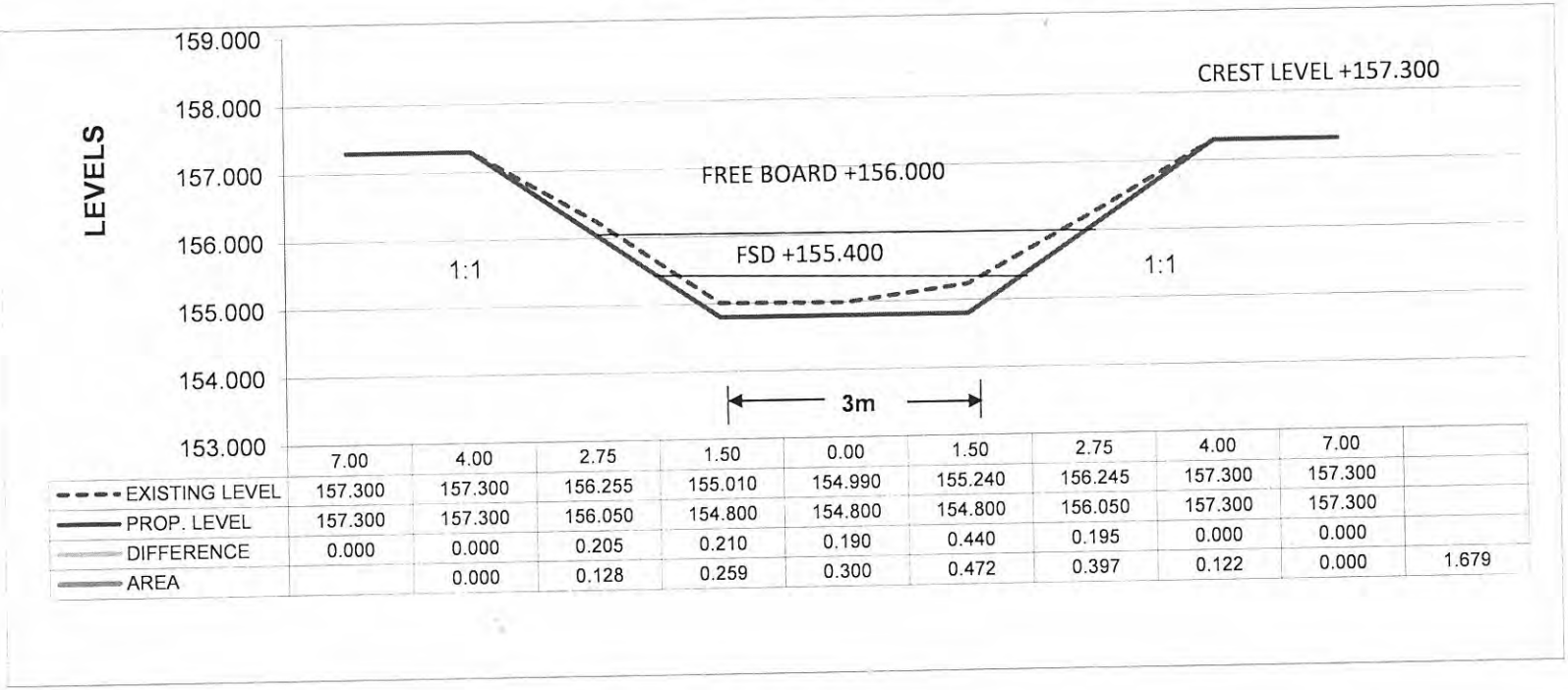


	7.00	4.00	2.75	1.50	0.00	1.50	2.75	4.00	7.00	
EXISTING LEVEL	157.400	157.400	156.354	155.107	155.087	155.337	156.344	157.400	157.400	
PROP. LEVEL	157.400	157.400	156.150	154.900	154.900	154.900	156.150	157.400	157.400	
DIFFERENCE	0.000	0.000	0.204	0.207	0.187	0.437	0.194	0.000	0.000	
AREA		0.000	0.127	0.257	0.296	0.468	0.394	0.121	0.000	1.662

C.S @ 300

28/1/21
AE/MNYD Dam

KUMARAPALAYAM ANICUT SUPPLY CHANNEL



	7.00	4.00	2.75	1.50	0.00	1.50	2.75	4.00	7.00	
EXISTING LEVEL	157.300	157.300	156.255	155.010	154.990	155.240	156.245	157.300	157.300	
PROP. LEVEL	157.300	157.300	156.050	154.800	154.800	154.800	156.050	157.300	157.300	
DIFFERENCE	0.000	0.000	0.205	0.210	0.190	0.440	0.195	0.000	0.000	
AREA		0.000	0.128	0.259	0.300	0.472	0.397	0.122	0.000	1.679

C.S @ 500

25/1/2019.
ASSISTANT ENGINEER
MNA DAM SECTION

TNIAMP - PHASE III

ADEQUACY CHECK OF LENGTH FOR THE TANKS UNDER MANIMUKTHANADHI SUB BASIN

S.NO	NAME OF THE TANK	TBL in m	MWL in m	FTL in m	Head over crest in m	Highest rainfall intensity in mm/day	Highest rainfall recorded in the year	Combined Catchment Area in Sq.Km	Discharge Based on rainfall intensity in cusecs	Existing Weir	
										Length in m	Discharging Capacity in cusecs
1	Peruvangur	120.470	119.470	118.870	0.6	169.00	1977	5.62	388.47	30	849.33
2	Chittalur	97.920	96.920	96.320	0.6	169.00	1977	4.53	313.24	26	735.96
3	Kudiyanallur	89.990	88.990	88.390	0.6	169.00	1977	4.27	295.23	25	707.71
4	Ninnaiyur	80.850	79.850	79.250	0.6	169.00	1977	4.27	295.23	25	707.71
5	Udayanatchi	78.300	76.800	76.200	0.6	169.00	1977	3.77	260.62	23	651.21
6	Vadathorasalur	116.510	115.510	114.910	0.6	169.00	1977	3.06	212.24	20	566.10
7	Kachirayapalayam	162.230	161.230	160.630	0.6	114.00	2015	10.67	497.59	46	1302.42

29/12/20
Executive Engineer, PWD
Vellar Basin Division,
Vridhachalam.

29/12/20
Supertending Engineer, PWD
Vellar BasinCircle,
Cuddalore.

29/12/20
Chief Engineer, PWD
Chennai Region,
Chennai.

Rehabilitation and Modernisation of 13 Tanks and 2 Anicuts in Kallakurichi Taluk, 21 Tanks and 5 Anicuts in Sankarapuram Taluk , 3 Anicuts in Chinnasalem Taluk and its Supply Channel of Kallakurichi District under Manimukthanadhi Sub Basin

PERUVANGUR TANK

MAXIMUM FLOOD DICHARGE /RUN OFF (Q) CALCULATION

RATIONAL FORMULA

Maximum Flood Discharge / Run off (Q) = 0.278 CIA m3/sec

Where

C = Run off Co efficient =1

I = Intencity of Rainfall (Intensity of worst rainfall for the past 100 years and year of rainfall should be furnished

A =Combined Catchment area

Based on the Rain fall particulars available at Sankarapuram for the past 44 Years ,Maximum Rainfall data

Maximum Rainfall on 13.11.1977 one day = 169 mm @ Sankarapuram

C = 1

I = 169 / 24 mm / Hour = 7.041667 mm

A = 5.62 Sq.KM

Q = 0.278 x 1 7.0416667 x 5.62

Q = 11.0016 Cumecs

i) Discharge through Weir No.1 :

Existing N.C Weir 1 Length = 30.00 m

Discharge , Q = 2/3 cd L h $(2gh)^{1/2}$

cd = Co - efficient of discharge = 0.625

Maximum Water Level = 119.470

Full Tank level = 118.870

h = over the crest = 0.60

Discharge , Q1 = 2/3 x 0.625x 30.00x 0.60 x Sqrt 2 x 9.81 x 0.60

Discharge , Q1 = 25.73 Cumecs

Total Designed discharge capacity = 25.73 > 11.00 Cumecs

Hence Safe

Assistant Engineer, PWD/WRD
Irrigation Section,
Kallakurichi

21/12/2020
Assistant Executive Engineer, PWD/WRD
Vellar Basin Subdivision,
Kallakurichi

21/12/2020
Executive Engineer, PWD/WRD
Vellar Basin Division,
Vridhachalam.

Rehabilitation and Modernisation of 13 Tanks and 2 Anicuts in Kallakurichi Taluk, 21 Tanks and 5 Anicuts in Sankarapuram Taluk , 3 Anicuts in Chinnasalem Taluk and its Supply Channel of Kallakurichi District under Manimukthanadhi Sub Basin

KACHIRAYAPALAIYAM TANK

MAXIMUM FLOOD DICHARGE /RUN OFF (Q) CALCULATION

RATIONAL FORMULA

Maximum Flood Discharge / Run off (Q) = 0.278 CIA m3/sec

Where

C = Run off Co efficient =1

I = Intencity of Rainfall (Intensity of worst rainfall for the past 100 years and year of rainfall should be furnished

A =Combined Catchment area

Based on the Rain fall particulars available at Sankarapuram for the past 44 Years ,Maximum Rainfall data

Maximum Rainfall on 29.9.2015 one day = 114 mm @ Vadakkanandal

C = 1

I = 114 / 24 mm / Hour = 4.75 mm

A = 10.67 Sq.KM

Q = 0.278 x 1 4.75 x 10.67

Q = 14.0897 Cumecs

i) Discharge through Weir No.1 :

Existing N.C Weir 1 Length = 46.00 m

Discharge , Q = 2/3 cd L h $(2gh)^{1/2}$

cd = Co - efficient of discharge = 0.625

Maximum Water Level = 161.230

Full Tank level = 160.630

h = over the crest = 0.60

Discharge , Q1 = 2/3 x 0.625x 46.00 x 0.60 x Sqrt 2 x 9.81 x 0.60

Discharge , Q1 = 39.46 Cumecs

Total Designed discharge capacity = 39.46 > 14.09 Cumecs

Hence Safe

Assistant Engineer, PWD/WRD
Irrigation Section,
Kallakurichi

Assistant Executive Engineer, PWD/WRD
Vellar Basin Subdivision,
Kallakurichi

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

Rehabilitation and Modernisation of 13 Tanks and 2 Anicuts in Kallakurichi Taluk, 21 Tanks and 5 Anicuts in Sankarapuram Taluk , 3 Anicuts in Chinnasalem Taluk and its Supply Channel of Kallakurichi District under Manimukthanadhi Sub Basin

VADATHORASALUR TANK

MAXIMUM FLOOD DICHARGE /RUN OFF (Q) CALCULATION

RATIONAL FORMULA

Maximum Flood Discharge / Run off (Q) = 0.278 CIA m3/sec

Where

C = Run off Co efficient =1

I = Intencity of Rainfall (Intensity of worst rainfall for the past 100 years and year of rainfall should be furnished

A =Combined Catchment area

Based on the Rain fall particulars available at Sankarapuram for the past 44 Years ,Maximum Rainfall data

Maximum Rainfall on 13.11.1977 one day = 169 mm @ Sankarapuram

C = 1

I = 169 / 24 mm / Hour = 7.041667 mm

A = 3.06 Sq.KM

Q = 0.278 x 1 7.0416667 x 3.06

Q = 5.99021 Cumecs

i) Discharge through Weir No.1 :

Existing N.C Weir 1 Length = 20.00 m

Discharge , Q = $2/3\ cd\ L\ h\ (2gh)^{1/2}$

cd = Co - efficient of discharge = 0.625

Maximum Water Level = 115.510

Full Tank level = 114.910

h = over the crest = 0.60

Discharge , Q1 = 2/3 x 0.625x 20.00 x 0.60 x Sqrt 2 x 9.81 x 0.60

Discharge , Q1 = 17.16 Cumecs

Total Designed discharge capacity = 17.16 > 5.99 Cumecs

Hence Safe

Assistant Engineer, PWD/WRD
Irrigation Section,
Kallakurichi

Assistant Executive Engineer, PWD/WRD
Vellar Basin Subdivision,
Kallakurichi

21/11/2022

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

Rehabilitation and Modernisation of 13 Tanks and 2 Anicuts in Kallakurichi Taluk, 21 Tan and 5 Anicuts in Sankarapuram Taluk , 3 Anicuts in Chinnasalem Taluk and its Supply Channel of Kallakurichi District under Manimukthanadhi Sub Basin

UDAYANATCHI TANK

MAXIMUM FLOOD DICHARGE /RIJN OFF (Q) CALCULATION

RATIONAL FORMULA

Maximum Flood Discharge / Run off (Q) = 0.278 CIA m3/sec

Where

C = Run off Co efficient =1

I = Intencity of Rainfall (Intensity of worst rainfall for the past 100 years and year of rainfall should be furnished

A =Combined Catchment area

Based on the Rain fall particulars available at Sankarapuram for the past 44 Years ,Maximum Rainfall data

Maximum Rainfall on 13.11.1977 one day = 169 mm @ Sankarapuram

C = 1

I = 169 24 mm / Hour = 7.041667 mm

A = 3.77 Sq.KM

Q = 0.278 x 1 7.0416667 x 3.77

Q = 7.38009 Cumecs

i) Discharge through Weir No.1 :

Existing N.C Weir 1 Length = 23.00 m

Discharge , Q = 2/3 cd L h $(2gh)^{1/2}$

cd = Co - efficient of discharge = 0.625

Maximum Water Level = 76.800

Full Tank level = 76.200

h = over the crest = 0.60

Discharge , Q1 = 2/3 x 0.625x 23.00 x 0.60 x Sqrt 2 x 9.81 x 0.60

Discharge , Q1 = 19.73 Cumecs

Total Designed discharge capacity = 19.73 > 7.38 Cumecs

Hence Safe

Assistant Engineer, PWD/WRD
Irrigation Section,
Kallakurichi

Assistant Executive Engineer, PWD/WRD
Vellar Basin Subdivision,
Kallakurichi

21/12/2022
Executive Engineer, PWD/WRD
Vellar Basin Division,
Vridhachalam.

Rehabilitation and Modernisation of 13 Tanks and 2 Anicuts in Kallakurichi Taluk, 21 Tan and 5 Anicuts in Sankarapuram Taluk , 3 Anicuts in Chinnasalem Taluk and its Supply Channel of Kallakurichi District under Manimukthanadhi Sub Basin

NINAIYUR TANK

MAXIMUM FLOOD DICHARGE /RUN OFF (Q) CALCULATION

RATIONAL FORMULA

Maximum Flood Discharge / Run off (Q) = 0.278 CIA m3/sec

Where

C = Run off Co efficient =1

I = Intencity of Rainfall (Intensity of worst rainfall for the past 100 years and year of rainfall should be furnished

A =Combined Catchment area

Based on the Rain fall particulars available at Sankarapuram for the past 44 Years ,Maximum Rainfall data

Maximum Rainfall on 13.11.1977 one day = 169 mm @ Sankarapuram

C = 1

I = 169 / 24 mm / Hour = 7.041667 mm

A = 4.27 Sq.KM

Q = 0.278 x 1 7.0416667 x 4.27

Q = 8.35888 Cumecs

i) Discharge through Weir No.1 :

Existing N.C Weir 1 Length = 25.00 m

Discharge , Q = 2/3 cd L h $(2gh)^{1/2}$

cd = Co - efficient of discharge = 0.625

Maximum Water Level = 79.850

Full Tank level = 79.250

h = over the crest = 0.60

Discharge , Q1 = 2/3 x 0.625x 25.00 x 0.60 x Sqrt 2 x 9.81 x 0.60

Discharge , Q1 = 21.44 Cumecs

Total Designed discharge capacity = 21.44 > 8.36 Cumecs

Hence Safe

Assistant Engineer, PWD/WRD
Irrigation Section,
Kallakurichi

Assistant Executive Engineer, PWD/WRD
Vellar Basin Subdivision,
Kallakurichi

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

Rehabilitation and Modernisation of 13 Tanks and 2 Anicuts in Kallakurichi Taluk, 21 T Sankarapuram Taluk , 3 Anicuts in Chinnasalem Taluk and its Supply Channel of Kallal Manimukthanadhi Sub Basin

KUDIYANALLUR TANK

MAXIMUM FLOOD DICHARGE /RUN OFF (Q) CALCULATION

RATIONAL FORMULA

Maximum Flood Discharge / Run off (Q) = 0.278 CIA m3/sec

Where

C = Run off Co efficient =1

I = Intencity of Rainfall (Intensity of worst rainfall for the past 100 years and year of rainfall should be furnished

A =Combined Catchment area

Based on the Rain fall particulars available at Sankarapuram for the past 44 Years ,Maximum Rainfall data

Maximum Rainfall on 13.11.1977 one day = 169 mm @ Sankarapuram

C = 1

I = 169 / 24 mm / Hour = 7.041667 mm

A = 4.27 Sq KM

Q = 0.278 x 1 7.0416667 x 4.27

Q = 8.35888 Cumecs

i) Discharge through Weir No.1 :

Existing N.C Weir 1 Length = 25.00 m

Discharge , Q = 2/3 cd L h $(2gh)^{1/2}$

cd = Co - efficient of discharge = 0.625

Maximum Water Level = 88.990

Full Tank level = 88.390

h = over the crest = 0.60

Discharge , Q1 = 2/3 x 0.625x 25.00 x 0.60 x Sqrt 2 x 9.81 x 0.60

Discharge , Q1 = 21.44 Cumecs

Total Designed discharge capacity = 21.44 > 8.36 Cumecs

Hence Safe

Assistant Engineer, PWD/WRD
Irrigation Section,
Kallakurichi

Assistant Executive Engineer, PWD/WRD
Vellar Basin Subdivision,
Kallakurichi

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

Rehabilitation and Modernisation of 13 Tanks and 2 Anicuts in Kallakurichi Taluk, 21 Tar Anicuts in Sankarapuram Taluk , 3 Anicuts in Chinnasalem Taluk and its Supply Chan Kallakurichi District under Manimukthanadhi Sub Basin

CHITTALUR TANK

MAXIMUM FLOOD DICHARGE /RUN OFF (Q) CALCULATION

RATIONAL FORMULA

Maximum Flood Discharge / Run off (Q) = 0.278 CIA m3/sec

Where

C = Run off Co efficient =1

I = Intencity of Rainfall (Intensity of worst rainfall for the past 100 years and year of rainfall should be furnished

A =Combined Catchment area

Based on the Rain fall particulars available at Sankarapuram for the past 44 Years ,Maximum Rainfall data

Maximum Rainfall on 13.11.1977 one day = 169 mm @ Sankarapuram

C = 1

I = 169 / 24 mm / Hour = 7.04167 mm

A = 4.53 Sq.KM

Q = 0.278 x 1 7.0416667 x 4.53

Q = 8.86785 Cumecs

i) Discharge through Weir No.1 :

Existing N.C Weir 1 Length = 26.00 m

Discharge , Q = 2/3 cd L h $(2gh)^{1/2}$

cd = Co - efficient of discharge = 0.625

Maximum Water Level = 96.920

Full Tank level = 96.320

h = over the crest = 0.60

Discharge , Q1 = 2/3 x 0.625x 26.00 x 0.60 x Sqrt 2 x 9.81 x 0.60

Discharge , Q1 = 22.30 Cumecs

Total Designed discharge capacity = 22.30 > 8.87 Cumecs

Hence Safe

Assistant Engineer, PWD/WRD
Irrigation Section,
Kallakurichi

Assistant Executive Engineer, PWD/WRD
Vellar Basin Subdivision,
Kallakurichi

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

HYDRUALIC PARTICULARS OF THE TANKS

Sl.No.	Name of Tank	Ayacut (ha)	Capacity (Mcft)	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)	No of Weir	Weir Length	Length of Bund (m)	Height of Bund (m)	Length of Supply Channel (m)
1	Peruvangur Tank	57.95	0.15	1.13	5.62	17.6	3	116.27	118.9	119.47	120.5	2.6	1	30	875	4.2	2100
2	Chittalur Tank	155.79	0.32	1.04	4.53	34	2	93.52	96.32	96.92	97.92	2.8	1	26	1800	4.4	6300
3	Pudhupalur Tank	95.71	0.22	1.32	4.27	35	2	86.59	88.39	88.99	89.99	2.8	1	25	1400	4.4	1000
4	Nanaiyur Tank	48.08	0.22	1.32	4.27	26	1	76.7	79.25	79.85	80.85	2.55	1	25	1100	4.15	-
5	Udayanatchi Tank	59.91	0.29	0.98	3.77	32.1	2	73.5	76.2	76.8	78.3	2.7	1	23	750	4.8	1200
6	VadaThorasalur Tank	50.93	0.2	0.82	3.06	32.1	2	113.01	114.9	115.51	116.5	1.9	1	20	2200	3.5	-
7	Kacharayapalayam Tank	89.88	0.68	2.67	10.67	74.5	3	157.88	160.6	161.23	162.2	2.75	1	46	1264	4.35	3200

Assistant Engineer
P.W.D.,W.R.O.,
Irrigation Section,
Kallakurichi-606202

ASSISTANT EXECUTIVE ENGINEER, PWD
VELLAR BASIN SUB DIVISION, WRD,
KALLAKURICHI

Executive Engineer P.W.D./W.R.O.
Vellar Basin Division, Vriddhachalam

PUBLIC WORKS DEPARTMENT
WATER RESOURCES DEPARTMENT

From

Er.S.Shanthi M.E.,
Superintending Engineer, PWD
Designs Circle, WRD
Chennai 600 005.

To

The Chief Engineer, PWD,
Chennai Region,
Chepauk,
Chennai.

Lr.No: / SE(D)/AEE 1/T 1 /F. 1433 /2020/ dated : 29.12.2020

Sir,

Sub: TNIAM Project – Phase III DPR – Manimukthanadhi Sub basin - Technical Review Comments given by Mr.R.K. Malhotra, Consultant, World Bank – Revised Design Flood – Adequacy of length of weir for 7 Tanks checked – Communicated - reg.

Ref: 1. Engineer-in-Chief, WRD& Chief Engineer (GI), PWD, Chennai Lr.No. TNIAMP/F142/Phase III/2019/Dt. 10.11.2020.
2. Chief Engineer, Chennai Region, PWD., WRD., Chennai Lr. No. OT3/AE4/TNIAMP/Phase III/Adequacy- Manimukthanadhi/2020 dt.22.12.2020

In the reference 2nd cited the Chief Engineer, Chennai Region has sent the Hydraulic particulars of the following 7 Nos. of tanks under Manimukthanadhi sub Basin along with the calculations for the Maximum flood discharge based on rainfall intensity, for checking the adequacy of the existing weirs.

1. Peruvangur tank
2. Chittaiur tank
3. Kudiyanallur tank
4. Ninnaiyur tank
5. Udayanatchi tank
6. Vada Thorasalur tank
7. Kacharapalayam tank

On scrutiny of the details furnished by the Chief Engineer, Chennai Region it is observed that the length of the weirs for the above 7 Tanks under Manimukthanadhi

Sub Basin is found to be sufficient to dispose the discharge based on the rainfall intensity as furnished in Annexure 1.

Encl.: Annexure 1

29/12/20

For Superintending Engineer, PWD
Designs Circle, WRD.,
Chepauk, Chennai-5.

29/12/2020

1. Copy submitted to the Engineer-in-Chief, WRD & Chief Engineer(GL), PWD, Chepauk, Chennai-5 for information.
2. Copy submitted to the Chief Engineer, PWD,DR&CS,WRD, Chepauk, Chennai-5 for information.
3. Copy to the Superintending Engineer, PWD, Vellar Basin Circle,WRD Cuddalore along with enclousre.
4. Copy to the Executive Engineer, PWD, Vellar Basin Division,WRD Virudhachalam along with enclousre.

ANNEXURE 1

TN IAMP - ADEQUACY CHECK OF LENGTH OF WEIRS FOR THE TANKS UNDER MANIMUKTHANADHI SUB BASIN

S. No.	Name of Tank	TBL in m	MWL in m	FTL in m	Head over crest in m	Discharge based on rainfall intensity in cumecs (as furnished by the Chief Engineer, Chennai Region)	Existing weir		Remarks
							Length in m	Discharging capacity in cumecs	
1	Peruvangur Tank	120.50	119.470	118.870	0.600	11.000	30.00	24.05	Existing length of surplus weir is sufficient to carry the Discharge based on rainfall intensity
2	Chittalur Tank	97.92	96.920	96.320	0.600	8.870	26.00	20.84	Existing length of surplus weir is sufficient to carry the Discharge based on rainfall intensity
3	Kudivanallur Tank	89.99	88.990	88.390	0.600	8.360	25.00	20.04	Existing length of surplus weir is sufficient to carry the Discharge based on rainfall intensity
4	Ninnaiyur Tank	80.85	79.850	79.250	0.600	8.360	25.00	20.04	Existing length of surplus weir is sufficient to carry the Discharge based on rainfall intensity
5	Udayanatchi Tank	78.30	76.800	76.200	0.600	7.380	23.00	18.44	Existing length of surplus weir is sufficient to carry the Discharge based on rainfall intensity
6	VadaThorasalur Tank	116.50	115.510	114.910	0.600	6.010	20.00	16.03	Existing length of surplus weir is sufficient to carry the Discharge based on rainfall intensity
7	Kacharayapalayam Tank	162.20	161.230	160.630	0.600	14.090	46.00	36.88	Existing length of surplus weir is sufficient to carry the Discharge based on rainfall intensity

29/12/2020

For Superintending Engineer, PWD
Designs Circle, WRD,
Chepauk, Chennai -05.

29/12/2020

TAMILNADU IRRIGATED AGRICULTURE MODERNIZATION PROJECT

Phase – III Manimuktha Nadhi Sub Basin

Certificate for Weir Discharge and Earth fill Quantities.

1. The Rainfall intensity Considered for the calculation of Discharge through the Existing Weir ids the actual Maximum one day Rainfall occurred since 1963.
2. The Earth fill provided in the cost estimate are worked by superimposing the proposed profile on the existing cross section and with cut benches/serrations as provided in the LS and CS drawings enclosed in the volume-II Manimutha Nadhi Sub Basin

Certified that, the above details are correct to the best of my knowledge.

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.

SUPERINTING ENGINEER.PWD.WRD.,
VELLAR BASIN CIRCLE,
CUDDALORE

CHIEF ENGINEER,PWD.WRD.,
CHENNAI REGION,
CHENNAI.

S.No.	Name of Tank / Anicut	Rehabilitation toTank and Anicurt Bund		Remarks
		Length (m)	Quantity M3	
1	2	3	4	5
1	pootai Anicut	120	-	
2	pandalam Anicut	125	-	
3	Chellampattu Anicut	30	-	
4	Karadichutthur Anicut	68	1200	
5	Kumarapalayam Anicut	62	-	
6	Thavadipattu Anicut	65	-	
7	Pallakatchery Anicut	197	4770	
8	Panayangal Anicut	197	-	
9	koothakudi Anicut	137	4500	
10	Seshasamuthiram Anicut	31	-	
11	Peruvangur Tank	875	-	
12	Thandalai Tank	1875	13650	
13	Thirukkanangur Tank	1800	12000	
14	Ka.Alambalam Tank	-	-	
15	Alathur Tank	5000	45500	
16	Chittalur Tank	1800	10000	
17	Kudiyanallur Tank	1400	9200	
18	Koothakkudi Tank	2200	13000	
19	Ninnaiyur Tank	1100	6700	
20	Prithivimangalam	1650	12700	
21	Sithathur Tank	1000	6500	
22	Thyiyagai Tank	1100	6500	
23	Udayamampattu Tank	1300	6500	

24	Udayanatchi Tank	750	4000	
25	Vada Thorasalur Tank	2200	14000	
26	Pallagacherry Tank	2400	19500	
27	Kalayanallur Small Tank	760	9800	
28	Kalayanallur Tank	1150	9500	
29	Chellampattu Tank	1200	6900	
30	Kosapadi Tank	1150	8000	
31	Manjaputtur Tank	1100	12700	
32	Pandaiam Tank	1400	15000	
33	Poikunam Tank	1050	8100	
34	Pootai Tank	1080	15000	
35	Sembarampattu Tank	1200	8200	
36	Urangani Tank	1100	15600	
37	Vadachettiyandal	1080	12100	
38	Kallaerikuppam Tank	740	6100	
39	Palaya SiruvangurPeriya Eri	1065	8500	
40	Palaya korakachandal Tank	700	5800	
41	Pallipattu Tank	1120	9000	
42	Velanmandal Tank	980	7700	
43	Kacharayapalayam Tank	1260	9500	
44	Vadakanandal Kalleri Tank	1200	9500	
	Total		367220 M^3	

A. Narayanan 29.12.2020

29.12.2020

ASSISTANT EXECUTIVE ENGINEER, PWD
VELLAR BASIN SUB DIVISION, WRD,
KALLAKURICHI.

29/12/20

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

29/12/20

SE/VELLAR BASIN CIRCLE.

S.No.	Name of Tank / Anicut	Rehabilitation to Anicurt Bund		Remarks
		Length (m)	Quantity M3	
1	2	3	4	5
1	pootai Anicut	120	-	
2	pandalam Anicut	125	-	
3	Chellampattu Anicut	30	-	
4	Karadichutthur Anicut	68	1200.00	
5	Kumarapalayam Anicut	62	-	
6	Thavadipattu Anicut	65	-	
7	Pallakatchery Anicut	197	4770.00	
8	Panayangal Anicut	197	-	
9	koothakudi Anicut	137	4500.00	
10	Seshasamuthiram Anicut	31	-	
	Total		10470.00	

S.No.	Name of Tank / Anicut	Rehabilitation toTank Bund		Remarks
		Length (m)	Quantity M3	
1	2	3	4	5
1	Peruvangur Tank	875	-	
2	Thandalai Tank	1875	13650.00	
3	Thirukkanangur Tank	1800	12000.00	
4	Ka.Alambalam Tank	-	-	
5	Alathur Tank	5000	45500	
6	Chittalur Tank	1800	10000	
7	Kudiyanallur Tank	1400	9200.00	
8	Koothakkudi Tank	2200	13000.00	
9	Ninnaiyur Tank	1100	6700.00	
10	Prithivimangalam	1650	12700.00	
11	Sithathur Tank	1000	6500.00	
12	Thyiyagai Tank	1100	6500.00	
13	Udayamampattu Tank	1300	6500.00	
14	Udayanatchi Tank	750	4000.00	
15	Vada Thorasalur Tank	2200	14000.00	
16	Pallagacherry Tank	2400	19500.00	
17	Kalayanallur Small Tank	760	9800.00	
18	Kalayanallur Tank	1150	9500.00	
19	Chellampattu Tank	1200	6900.00	
20	Kosapadi Tank	1150	8000.00	
21	Manjaputtur Tank	1100	12700.00	
22	Pandalam Tank	1400	15000.00	
23	Poikunam Tank	1050	8100.00	

24	Pootai Tank	1080	15000.00	
25	Sembarampattu Tank	1200	8200.00	
26	Urangani Tank	1100	15600.00	
27	Vadachettiyandal	1080	12100.00	
28	Kallaerikuppam Tank	740	6100.00	
29	Palaya SiruvangurPeriya Eri	1065	8500.00	
30	Palaya korakachandal Tank	700	5800.00	
31	Pallipattu Tank	1120	9000.00	
32	Velanmandal Tank	980	7700.00	
33	Kacharayapalayam Tank	1260	9500.00	
34	Vadakanandal Kalleri Tank	1200	9500.00	
	Total		356750.00	