

**DETAILED NOTE ON THE PROJECT "TELANGANA DRINKING WATER SUPPLY PROJECT
IN ADILABAD DISTRICT" WITH AN ESTIMATED COST OF Rs. 220.00 Crores.**

DHARMARAM GUTTA SEGMENT – 23/1

I. Introduction :

The project area lies in Adilabad District in Telangana state in India, which forms a part of backward region of Telangana and covering 52 mandals in 10 Assembly constituencies. The proposed project area is worst effected due to excess minerals in ground water and brackishness of water in the district. Many mandals in the scheme area falls under category I and II of ground water exploitation, which is 90% to 100%. The ground water table is declining at a faster rate. These mandals are experiencing continuous drought for the last five to six years.

Due to fast depletion of ground water, the concentration of salts in available ground water is increasing, thus the water is becoming brackish and fluoride contents are increasing, which is not suitable for drinking purpose. The people mainly women in this area are carrying drinking water from far off places from agricultural lands where meagre quantity of water is available with difficulty. This leads to acute problem of drinking water besides the problem of pollution and brackishness.

II. Present situation:

The source for water supply in rural habitations are mainly by bore wells dug in the habitation, pumped to Service reservoirs and then drinking water is supplied to stand post / house connection.

The present level of supply is as follows:

Total Habitations in the District	3641
No. of PC1 habitations	429
No. of PC2 habitations	427
No. of PC3 habitations	476
No. of PC4 habitations	519
No. of FC habitations	1766
No. of NSS habitations	04
No. of NC habitations	0

III. Aim:

The main Aim of the project is to provide assured (surface) purified drinking water throughout the year to all habitations with 100 Litres per capita per day in Rural areas at house hold level ,135 LPCD in Urban areas and 150 LPCD in Corporations incl., providing required quantity of water to Industries located in Mancherla and Chennur Constituencies of Adilabad district. This project envisages to all habitations spread over 04 mandals and 2 municipalities spread over in Mancherla (3 mandals and 1 municipality) , Chennur (1 mandal and 1 municipality) constituencies in Adilabad district.

IV. Location and Climate:

The project area lies between East Longitude 79°06'23.49"E and 79°53'03.88"E and North latitudes of 19°03'26.50"N and 19°01'29.25"N.

The rainfall is mainly determined by south west monsoons. Moreover for the last few years severe drought conditions are prevailing in this area.

The River Godavari is the major river flowing in the district. Sripada Yellampally Project is constructed near Yellampally (V) of Peddapally Mandal in Karimnagar District with 20.175 TMC full capacity and Dead storage 3.30 TMC . The source is reliable, sustainable and dependable. The latitude & longitude of source is North latitude is 18°50'53.86"N and East longitude 79°21'58.15"E.

V. Necessity:

Adilabad is one of the ten Telangana Districts in the State. It is one of the most backward districts in the state. There is high concentration of fluorides in the ground water due to frequent failure of monsoons and severe drought conditions in the project area. The ground water table is depleting very fast and the Fluoride and other mineral contents in the ground water are increasing day to day. As a result of this, the habitation, which was provided with a bore well with hand pump as source of drinking water in the past is now yielding unacceptable quality of water. Many habitations which were under partially covered category earlier are again looking for relief as the source infrastructure provided earlier is in need of either augmentation (or) replacement. The area is in rocky terrain. The main problem is excess salts. Due to excess minerals, salts in drinking water due to which the people are suffering with knee pains, joint pains.

The scarcity besides the problem of excess salts and fluoride is playing havoc on the lives of the rural population. The provision of safe drinking water deserves first priority to improve the health and economic development of the area.

To tackle the problem of excess salts and fluoride and keeping in view the scarcity of safe drinking water and water requirement for improving/increasing high sanitation standards (using of ISL) in the project, it is envisaged to cover scarcity habitations of 04 mandals and 2 municipalities viz., Mancherial and Mandmarri with reliable and sustainable Sripada Yellampally Reservoir as source.

The details of the Population coverage in this segment is as follows

Constituency	Mandal Name	Pop 2011
Mancherial	Dandepally	49,741
	Luxettipet	50,674
	Mancherial	85,455
Chennur	Mandmarri	52,208
	Rural Population	2,38,078
Municipalities	Mancherial Municipality	87,153
	Mandmarri Municipality	66,176
	Urban Population	1,53,329

VI. Methodology :

After considering different options, the intakewell in Sripada Yellampally reservoir is selected as a source to the proposed project, which is reliable, dependable and nearest to the project area.

Through the proposed Grid all habitations are provided 100 LPCD for Rural areas, 135 LPCD in Urban areas at house hold with assured, safe treated drinking water throughout the year. incl., providing required quantity of water to Industries located.

VII. Details of Yellampally Reservoir :

The Source for the Grid is located in Back waters of Sripada Yellampally reservoir in Mancherial mandal which is constructed across River Godavari with storage capacity of 3.3 TMC.

The net requirement of water per annum for this Grid is 1.620 TMC (0.978TMC present requirement and 0.642 TMC existing schemes demand).

FRL of Sripada Yellampally Dam	:	148.00 (Capacity is 20.175 TMC)
Sill Level of gates	:	139.00 m (Capacity 3.310 TMC)
Dead Storage Level	:	129.00 m

VIII. Requirement of water:

SI No	Area	Required (TMC)	Existing (TMC)	Balance From Grid (TMC)
1	Rural	0.52	0.257	0.263
2	Urban	0.95	0.385	0.565
3	Industries	0.15	0	0.15
	Total	1.62	0.642	0.978

IX. Location of Intake point:

The Intake well is located near Gudipet Village in Mancherial mandal in Sripada Yellampally reservoir at +141.00m. The location is selected duly consulting the Irrigation authorities. The approach channel to intake well is proposed to draw raw water from dead storage level also. The soils are gravely and hence approach channel with silt trap are proposed. Approach channel of 500 mtrs is proposed and the same can be executed without difficulty. During the inspection of the proposed site for approach channel and Intake Well it is observed that hard rock strata may encounter during excavation and hence provision for the blasting during the earth work execution of approach feeder channel and Intake Well is incorporated in this estimate as per the site conditions. Also, NTPC authorities have executed similar nature of approach channel and confirmed the presence of hard rock strata during their execution. The Intake well is proposed in such a way that they can draw water below the dead storage level by gravity through approach channel. As per site conditions, approach bridge with 7.5 m wide is proposed to connect from intake well to nearby road.

The dedicated power lines (uninterrupted 24 Hours supply) from 132/33 KV substations are proposed for required power.

X. Rapid Sand filters:

Raw Water requirement is 47748 LPM and 95 MLD RSF is proposed at near Gudipet(Abadi) village in Mancherial mandal. The site for head works are proposed in Government land and already acquired. The raw water is treated and will be collected in 7000KL Capacity Clear water Sump.

The collected clear water in the sumps is pumped to OHBRs/ GLBRs which are to be constructed at higher elevation with staging up to 30 meters to command designed habitations with this sump. From OHBR / GLBR the water is daily supplied all habitations through pipes to Service reservoirs (OHSR/ GLSR) of the habitation.

In this the safe drinking water is supplied to every house hold level by pipes from service reservoirs in the habitation.

XI. Project design Criteria:

The design parameters adopted for this project component's are detailed below:

1. The Requirement of water in the Grid is taken duly deducting the demand of Existing/ongoing schemes with assured surface water.
2. **Design period:** The year 2018 is taken as the year of commissioning and considered as the base year. The Prospective Year considered as 2033 and the ultimate design period of the project is considered as 2048.
3. **Design population:** The census population of 2011 is considered. The Growth rate is as follows

Rural ; 0.80% with geometrical progression

Urban : 2% with Geometrical progression

4. Design parameters:

Raw water Intake well, Transmission lines and distribution pipelines are designed for ultimate population.

Treatment units, service reservoirs, sumps, pumping machinery are designed for prospective population.

5. System design criteria :

S No	Description	Details
1	Service level	100 LPCD in Rural areas and 135 LPCD for Urban areas at service point house hold connection
2	Operation period of pumping machinery	22 Hours
3	Power Supply	Dedicated power supply from 132KV or 33 KV sub-stations
4	Treatment Process	Rapid sand Filters.
5	Dis-infection	Addition of chlorine gas
6	Clear / Raw water sumps	2.5 Hours capacity at Head works & 4 hours at IPS
7	Balanced Reservoirs	30 Minutes capacity

8	Service reservoirs	50% of the daily demand
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XII. COST OF ESTIMATES:

In preparing the realistic estimates of the Preliminary project Report, the following modalities are followed:

- The existing infrastructure of all components viz. storage facilities like OHSRs / GLSRs, Sumps, Pumping mains and transmission lines are utilised in preparing the Estimate.
- While proposing pipe lines and structures, the economical designs are considered
- The Existing / Ongoing CPWS Schemes are considered and their demand is excluded in the Grid demand.
- The overall drinking water supply level at house hold is maintained 100 LPCD from the GRID including considering all existing/ ongoing schemes with surface water.
- The existing facilities like pipe lines, sumps, OHBRs, pumping machinery etc. of the existing / ongoing schemes are proposed to enhance the capacity to 100 LPCD from the present carrying capacities.
- The cost of all components viz. storage facilities like OHSRs, Sumps, Pumping mains and transmission lines are worked out using standard scheduled of rates of the prevailing year.

SEGMENT DETAILS:

S. No	Item	Details
1	Name of the Segment	Dharmaram gutta – 23/1
2	Name of the Clear water Source	GLBR on Dharmaramgutta 1500KL Capacity
3	Raw water Source	Sripada Yellampally Reservoir
4	No. Of Mandals covered	04 Nos
5	No. of Municipalities	02 Nos
6	Name of Constituencies	Mancherial and Chennur
7	No of habitations	180

XIII. OPERATION AND MAINTENANCE :

The adequate operation and maintenance will ensure the long-term sustainability of investments in the water supply sector. Proper care has been exercised and appropriate system design is adopted to eliminate most of the future maintenance problems.

XIV. Present proposal:

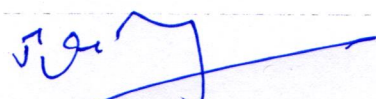
In the detailed estimate, the following items are proposed:

Sl.No	Description of item	Qty	Unit
1	Clear Water Pumpsets	3875	HP
2	Construction of Sumps		
	Clear water Sump at Head works 7000 KI Capacity	1	No
3	Construction of GLBR		
	1500 KI GLBR at Dharmaramgutta	1	No
4	Providing Gravity Main		
i)	Main Grid (As Per Sub-estimate)	132756	Rmt
ii)	Secondary Grid (As Per Sub-estimate)	256028	Rmt
5	Providing Pumping Main (As Per Sub-estimate)	23347	Rmt
6	Construction of Intermediate sumps		
i)	20 KI	2	Each
ii)	30 KI	1	Each
iii)	60 KI	2	Each
iv)	100 KI	2	Each
7	Watchman Quarters	16	Each
8	Pump House 4X6	7	Each

9	Pump house 24X12	1	Each
10	Compound wall (340 m length)	4	Nos
11	Construction of Sub-station & transformer yards at Head Works		
12	Provision for dedicated Power supply & Electrification at Head Works		
13	Provision for ground levelling & lanscaping		
14	O&M for 1 year		
15	Provision for Optical Fibre Cable (OFC)		
16	Provision for Road, Railway, forest and canal crossings and Permissions		
17	Provision for SCADA		

The cost of all above components are worked out using common standard schedule of rates 2014-15.

Dy. Executive Engineer
T.D.W.S.P. S.D., Mancherial.

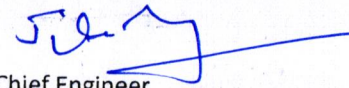

Chief Engineer
TDWSP (RWS&S), Hyderabad.

DETAILS OF SURVEY INSTRUMENTS USED				
S.No	Name of the Agency	Instruments used	Persons involved	Period of Survey
1	Vardhaman Engineers & Consultants	Trimble	Mr. Amarender Mr. Bhadri	November 2015 to January 2016

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T.D.W.S.P. S.D., Mancherial.

Superintending Engineer
TDWSP Circle, Nirmal

"Counter Signed"



Chief Engineer
TDWSP, Hyderabad

AREA STATEMENT DHARMARAM GUTTA SEGMENT - 23/1 - ADILABAD						
Set	Structure type	Pipe Dia	Length in m	width m	Area_Ha	Total area in Ha
1	PIPELINE	1200	1804.533	8.000	1.444	1.639
	GLBR				0.195	
2	PIPELINE	75	1929.392	0.700	0.135	0.135
3	PIPELINE	125	7233.539	0.700	0.506	0.506
4	PIPELINE	75	57.093	0.700	0.004	0.772
	PIPELINE	800	1124.311	1.400	0.157	
	PIPELINE	75	1053.748	0.700	0.074	
	PIPELINE	75	256.949	0.700	0.018	
	PIPELINE	75	484.742	0.700	0.034	
	PIPELINE	225	3178.280	0.900	0.286	
	PIPELINE	75	1070.457	0.700	0.075	
	PIPELINE	75	1777.686	0.700	0.124	
5	PIPELINE	180	5506.359	0.800	0.441	0.441
6	PIPELINE	125	2172.715	0.700	0.152	0.152
			27649.804			3.645

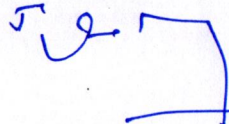
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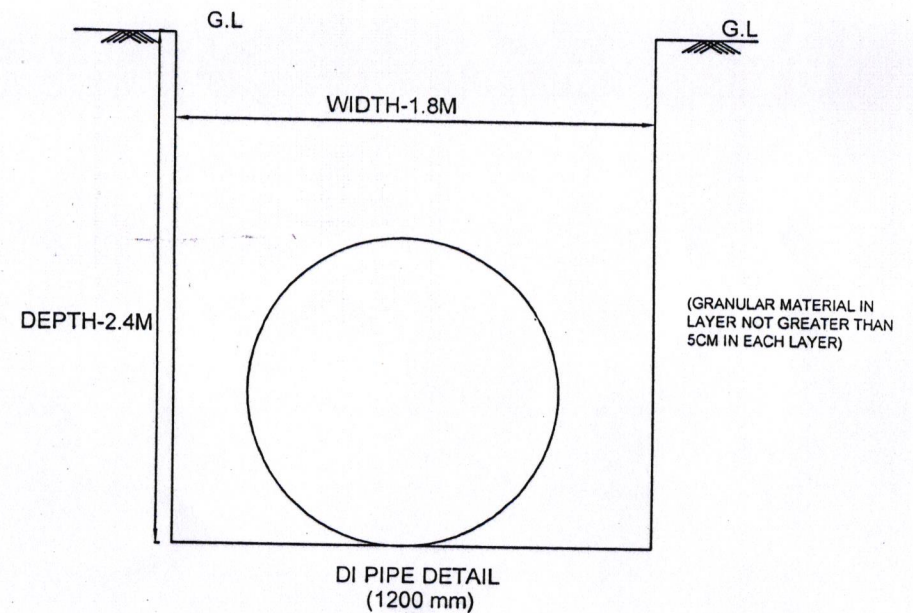
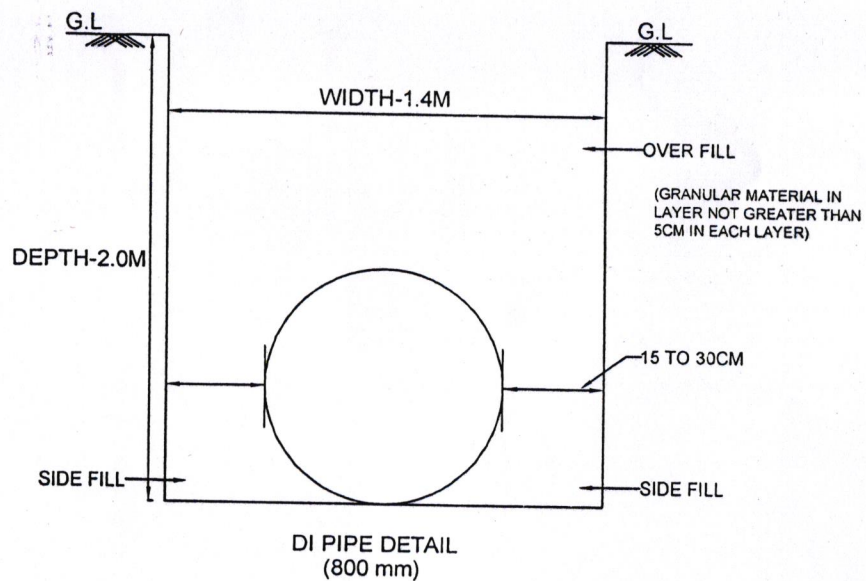
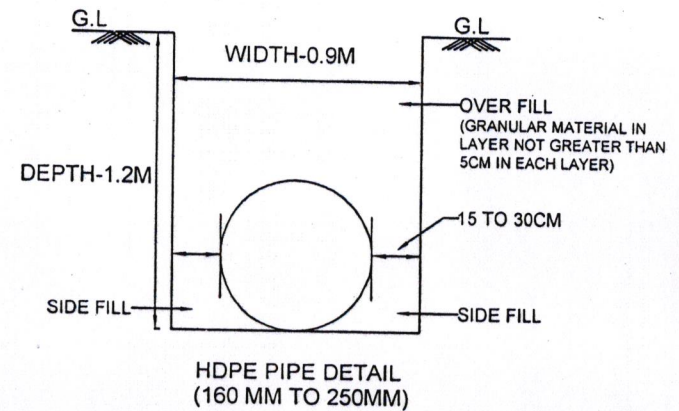
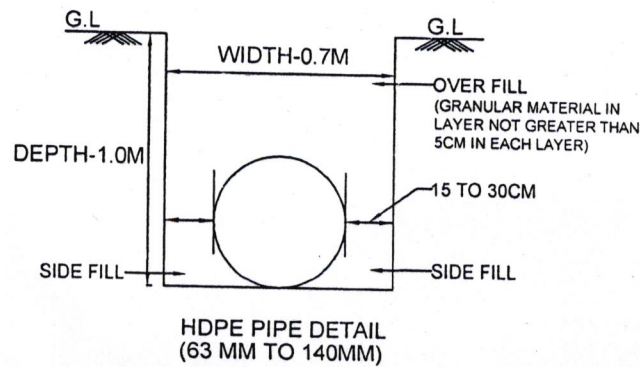
DETAILS OF FOREST AREA INVOLVED IN DHARMARAM GUTTA SEGMENT - 23/1

Set	DIVISION	RANGE	SECTION	BEAT	BLOCK_NAME	COMP_NO	Length_mt	Width	Dia	Area_Ha
1	MANCHERIAL	LUXETTIPET	HAJIPUR	TEEKANNAPALLY	RALLY	648	1804.533	8.000	1200	1.444
1	MANCHERIAL	LUXETTIPET	HAJIPUR	TEEKANNAPALLY	RALLY	648	25.000	25.000	0	0.195
2	MANCHERIAL	LUXETTIPET	JAGGAIAPET	HANMANTHPALLY	RALLY	568	1929.392	0.700	75	0.135
3	MANCHERIAL	LUXETTIPET	GADHPUR	GADPUR	ENCLOSURE	9999	7233.539	0.700	125	0.506
4	MANCHERIAL	MANCHERIAL	MANDAMARRY	SARANGAPALLY	INDARAM	682	484.742	0.700	75	0.034
4	MANCHERIAL	MANCHERIAL	MANDAMARRY	SARANGAPALLY	INDARAM	682	3178.280	0.900	225	0.286
4	MANCHERIAL	MANCHERIAL	MANDAMARRY	SARANGAPALLY	INDARAM	682	1070.457	0.700	75	0.075
4	MANCHERIAL	MANCHERIAL	MANDAMARRY	SARANGAPALLY	INDARAM	682	57.093	0.700	75	0.004
4	MANCHERIAL	MANCHERIAL	MANDAMARRY	SARANGAPALLY	INDARAM	683	1124.311	1.400	800	0.157
4	MANCHERIAL	MANCHERIAL	MANDAMARRY	SARANGAPALLY	INDARAM	684	1053.748	0.700	75	0.074
4	MANCHERIAL	MANCHERIAL	MANDAMARRY	SARANGAPALLY	INDARAM	684	256.949	0.700	75	0.018
4	MANCHERIAL	MANCHERIAL	MANDAMARRY	SARANGAPALLY	INDARAM	684	1777.686	0.700	75	0.124
5	MANCHERIAL	MANCHERIAL	MANDAMARRY	MANDAMARRI	INDARAM	674	5506.359	0.800	180	0.441
6	MANCHERIAL	MANCHERIAL	AUDAM	GUDIPALLY	BELLAMPALLY	353	2172.715	0.700	125	0.152

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TELANGANA DRINKING WATER SUPPLY PROJECT IN ADILABAD DIST. DHARMARAMGUTTA SEGMENT-23/1
 MAP SHOWING PIPELINE CROSS-SECTION IN FOREST AREA OF MANCHERIAL DIVISION.



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