

PROJECT REPORT ON

PROPOSED DRINKING WATER GRID IN NIZAMABAD DISTRICT

1. INTRODUCTION

The Government of Telangana is desired to improve the drinking water supply level to all the habitations in the state in the context of newly formation of its statehood. Accordingly, Hon'ble Chief Minister of Telangana State has instructed to construct a Water Supply Grid in the State of Telangana to upgrade the present water supply level from the existing 40 LPCD to 100 LPCD in rural habitations and to 135 LPCD in urban habitations. And also the Honorable Chief Minister intended to make provisions in the proposed Water Grid for Industrial Water Requirement and Water requirement for Municipalities and Corporations in the entire state. So that the entire water grid will become economically viable and self sustainable to meet Operation and maintenance cost by getting water user tariff from the Industries, Municipalities and Corporations along with other users. In this context, a Detailed Preliminary Report is prepared after conducting reconnaissance survey in the district. The Nizamabad District Profile at a Glance.

i) Introduction

Nizamabad District is one of the fluoride affected districts in Telangana for drinking water. The Project envisages covering all the habitations with supply level of 100 LPCD in rural habitations and 135 LPCD in urban habitations with a Tap to every house hold along with a 5% additional provision to meet Industrial requirement.

ii) Hydrogeological Conditions:

The ground water in this area is limited to secondary porosity developed through fracturing and subsequent weathering. The granites in this area lack primary porosity. The movement of ground water is controlled by the degree of inter - connection of these secondary pores. The average depth of weathering varies from 8 to 130 m. The fissures and joints extend upto a depth of 20 - 45 m. The ground water occurs in unconfined conditions in shallow weathered zone and under semi-confined conditions in joints, fissures and fractures. The depth

of well ranges from 6 - 18 m and the yield varies from 20 to 60 cum/day and in some wells upto 200 cum/day.

2. NECESSITY

Nizamabad is one of the 9 Telangana districts in the State. The ground water in the project area of the district contains high concentration of fluorides and brackish in the ground water. Due to frequent failure of monsoons in the project area the ground water table is depleting and the Fluoride and brackish level in the ground water is increasing. As a result of this, a habitation that is provided with a bore well fitted with hand pump as source of drinking water in the past is yielding unacceptable quality of water. Many habitations that are partially covered earlier are again looking for relief as the source infrastructure provided is in need of either augmentation (or) replacement. The main problem is excess fluoride and brackish in drinking water due to which people are suffering with knee pains, joint pains, dental Fluorosis and skeletal Fluorosis.

The provision of safe drinking water deserves top priority to improve the health and economic development of the people in the Nizamabad District.

3. OBJECTIVE:

As part of the Mission on control of Fluorosis and Brackishness, the present project is prepared to provide safe drinking water to fluoride and Saline affected habitations and also for providing house hold tap to each and every house hold with assured supply at the rate of 100LPCD for Rural and 135 LPCD. And an additional 5% is provisioned for Industrial requirement.

4. METHODOLOGY:

The RWS & S Department has conducted a preliminary investigation for providing water grid. Various options are explored in which the ground water sources are not considered since they are not potable and can't dependable due to excess salts and rapid depletion of ground water. As an alternate, the provision of surface water is examined by duly reviewing the available 8 No's of Major and Minor irrigation Projects in the Nizamabad District along with Singoor Project from Nizamabad District. Out of all these Projects, Singoor Project is opted for taking up the source for Grid 12 after thorough examination of the various factors which effects

the Sustainability of the Source. The Singoor Project is having 30.00TMC of Water from which 1.843 (2048 Year) TMC Water can be allocated for Drinking Water Grid 13 to cover 16 Mandals out of 36 Mandals of Nizamabad District.

The Segment – 12 is designed for 4 Assembly Segments, the Four assembly Segments are 1.Jukkal (5 Mandals) 2. Banswada (4 Mandals) 3, Yellareddy (3 Mandals) and 4. Bodhan (4Mandals) of Nizamabad District. For this segment 13, the Raw Water will be pumped from Singoor Intake Well i.e., +513.00 FVL to Head Works at Peddareddypet, 145MLD Treatment Plant at GL +524.50, Pulkal Mandal of Medak District, the Treated Water will be Pumped to OHBR at +560.00M at Thadmanur village of Andhol Mandal, Medak District. From the OHBR at Thadmanur the Filtered Water Flows by Gravity to certain habitations and some habitations through pumping from sumps.

5. SALIENT FEATURES OF SEGMENT - 12

The Segment 13 covers 4 Assembly Segments, 785 habitations spread over 16 Mandals and One (1) Bodhan Municipality. The 4 assembly segments are 1. Banswada 2. Jukkal 3. Bodhan and 4. Yellareddy Assembly Segment (only 3 Mandal's). The Raw Water will be Pumped from the common Intake Well (Medak Segment has been proposed in the same Intake Well) at Singoor Reservoir.

Head Works are proposed at Peddareddypet, Pulkal Mandal, Medak District with 145MLD Treatment Plant at GL+524.50M , the Treated Water will be Pumped again to 2 No's of 1350 KL OHBR at +560.00M. The Clear Water flows by Gravity to all the designed 785 Habitations in the Four assembly Segments i.e., 1.Jukkal (5 Mandals) 2. Banswada (4 Mandals) 3, Yellareddy (3 Mandals) and 4. Bodhan (4Mandals) of Nizamabad District

i) Source:

It is proposed to cover 785 habitations through this segment 12, Source at Singoor, Peddareddypet, Pulkal Mandal, Medak District. The raw water will be pumped from Intake Well to Peddareddypet 145 MLD Treatment Plant, Head Works. The Treated water will be Pumped again from Head Works to OHBR at Raipahad +560.00. From OHBR the water flows by gravity to all the proposed 785 habitations except 24 habitations which are situated over +540.00M and those habitations will be covered by Pumping.

- 1) Intake well at Singur Reservoir, Near Peddareddypet, Pulkal Mandal, Medak Dist.
- 2) Rapid Sand Filters of capacity of 145 MLD near Peddareddypet village.
- 3) Clear Water Sump 13300 KI Capacity at Peddareddypet.
- 4) OHBR of Capacity 2 x 1350 KL Capacity with 30.00M Staing at Thadmanur of Andhol (M).

Name of the Scheme	No of Assembly Segments	No of Habitations	Population as per 2011 Census
Water Grid - 12	4	785	8,68,988

.11. PROJECT PERIOD

The completion period is tentatively proposed as two years after obtaining administrative clearance from the Government.

13. CONCLUSION:

By implementing this project it can be ensured the availability of adequate quantity of drinking water of acceptable quality on long-term basis. The long-term objective of improvement of health of the people in the project area results in the overall development.

The project deserves to be considered on priority to save the people from Fluorosis that is crippling the abilities of the people in the project area. This project would especially cater to the health needs of the women and children who are the most essential target groups for any development to be meaningful and permanent and as well as the socio economic growth of the district.

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 E.E / TDWSP / Sanswals

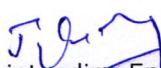
[Handwritten Signature]
 Superintending Engineer
 TDWSP Circle
 Nirmal

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 Chief Engineer
 RWS&S TDWSP, Hyderabad

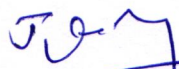
DETAILS OF SURVEY INSTRUMENTS USED

Sl. No	Name of the Agency	Instrument Used	Persons Involved	Period of Survey
1	Vardhaman Engineers and Consultants	Trimble and Leica DGPS	Praveen, Badri and Madhu	December- 2015 and January-2016 (Total 2 Months)


D. Houdas
EE (TDWSP)
Banswada



Superintending Engineer
RWS&S TDWSP,
Nirmal Circle.

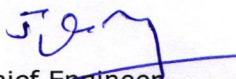
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Chief Engineer
RWS&S TDWSP, Hyderabad

AREA STATEMENT - YELLAREDDY SEGMENT - 12/1 - NIZAMABAD						
SET	STRUCTURE TYPE	PIPE DIA IN MM	WIDTH IN M	LENGTH IN M	AREA IN Ha	TOTAL AREA in Ha
1	PIPELINE	300	1.00	1097.900	0.110	0.110
2	PIPELINE	75	0.80	1466.983	0.117	0.117
3	PIPELINE	700	2.50	456.419	0.114	0.718
	PIPELINE	700	5.00	957.086	0.479	
	BPT				0.125	
4	PIPELINE	75	0.80	2277.346	0.182	0.401
	PIPELINE	1200	5.00	348.313	0.174	
	BPT				0.045	
5	PIPELINE	110	1.20	1278.892	0.153	0.397
	PIPELINE	110	1.20	998.179	0.120	
	PIPELINE	110	1.20	1030.468	0.124	
6	PIPELINE	125	1.00	1605.209	0.161	0.238
	PIPELINE	75	0.80	423.189	0.034	
	PIPELINE	75	0.80	531.333	0.043	
7	PIPELINE	75	0.80	1173.811	0.094	1.977
	PIPELINE	75	0.80	679.022	0.054	
	PIPELINE	75	0.80	2887.380	0.231	
	PIPELINE	1200	3.00	2620.737	0.786	
	PIPELINE	1000	2.00	1542.744	0.309	
	PIPELINE	1000	2.00	1073.225	0.215	
	PIPELINE	180	1.00	922.589	0.092	
BPT				0.196		
8	PIPELINE	160	1.00	1865.663	0.187	0.319
	PIPELINE	75	0.80	346.012	0.028	
	PIPELINE	75	0.80	430.754	0.034	
	PIPELINE	110	0.90	184.449	0.017	
	PIPELINE	110	0.90	585.689	0.053	
TOTAL				26783.391	4.277	4.277


 Superintending Engineer
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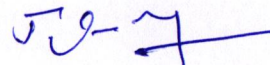

 EE (T) RWS&S/
 Bonswada

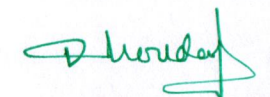
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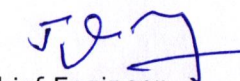
Details Of Area Involved in the Yellareddy Segment 12/1, Nizamabad District

S.No	DIVISION	RANGE	SECTION	BEAT	BLOCK	COMP_NO	SET	Dia	Length_mt	Width	Area_Ha
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>
1	KAMAREDDY	YELLAREDDY	YELLAREDDY	NAGIREDDYPET	SHATPALLY	695	1	300	1097.900	1.0	0.110
2	KAMAREDDY	YELLAREDDY	BOLLARAM	LAXMAPUR	YELLAREDDY	734	2	75	1466.983	0.8	0.117
3	KAMAREDDY	YELLAREDDY	BOLLARAM	LAXMAPUR	YELLAREDDY	726	3	700	456.419	2.5	0.114
4	KAMAREDDY	YELLAREDDY	BOLLARAM	LAXMAPUR	YELLAREDDY	726	3	700	957.086	5.0	0.479
5	KAMAREDDY	YELLAREDDY	BOLLARAM	LAXMAPUR	YELLAREDDY	726	3				0.125
6	KAMAREDDY	YELLAREDDY	YELLAREDDY	HASANPALLY	THIMMAREDDY	698	4	1200	348.313	5.0	0.174
7	KAMAREDDY	YELLAREDDY	YELLAREDDY	HASANPALLY	AMBARIPET II	696	4	75	2277.346	0.8	0.182
8	KAMAREDDY	YELLAREDDY	YELLAREDDY	HASANPALLY	AMBARIPET II	698	4				0.045
9	KAMAREDDY	GANDHARI	VELLUTLA	VELLUTLA	NO-DATA	815	5	110	998.179	1.2	0.120
10	KAMAREDDY	GANDHARI	VELLUTLA	VELLUTLA	NO-DATA	815	5	110	1030.468	1.2	0.124
11	KAMAREDDY	GANDHARI	VELLUTLA	VELLUTLA	NO-DATA	7777	5	110	1278.892	1.2	0.153
12	KAMAREDDY	GANDHARI	MUDHELLY	GANDIVATE	NO-DATA	7777	6	75	423.189	0.8	0.034
13	KAMAREDDY	GANDHARI	VELLUTLA	MOMBAJIPET	NO-DATA	7777	6	125	1605.209	1.0	0.161
14	KAMAREDDY	GANDHARI	VELLUTLA	MOMBAJIPET	NO-DATA	7777	6	75	531.333	0.8	0.043
15	NIZAMABAD	BANSWADA	BANSWADA	MOHAMMEDNAGAR	NO-DATA	7777	7	75	2887.380	0.8	0.231
16	NIZAMABAD	BANSWADA	BANSWADA	MAQDUMPUR	GAJGATLAPALLI	291	7	1200	2620.737	3.0	0.786
17	NIZAMABAD	BANSWADA	BANSWADA	MAQDUMPUR	GAJGATLAPALLI	291	7	180	922.589	1.0	0.092

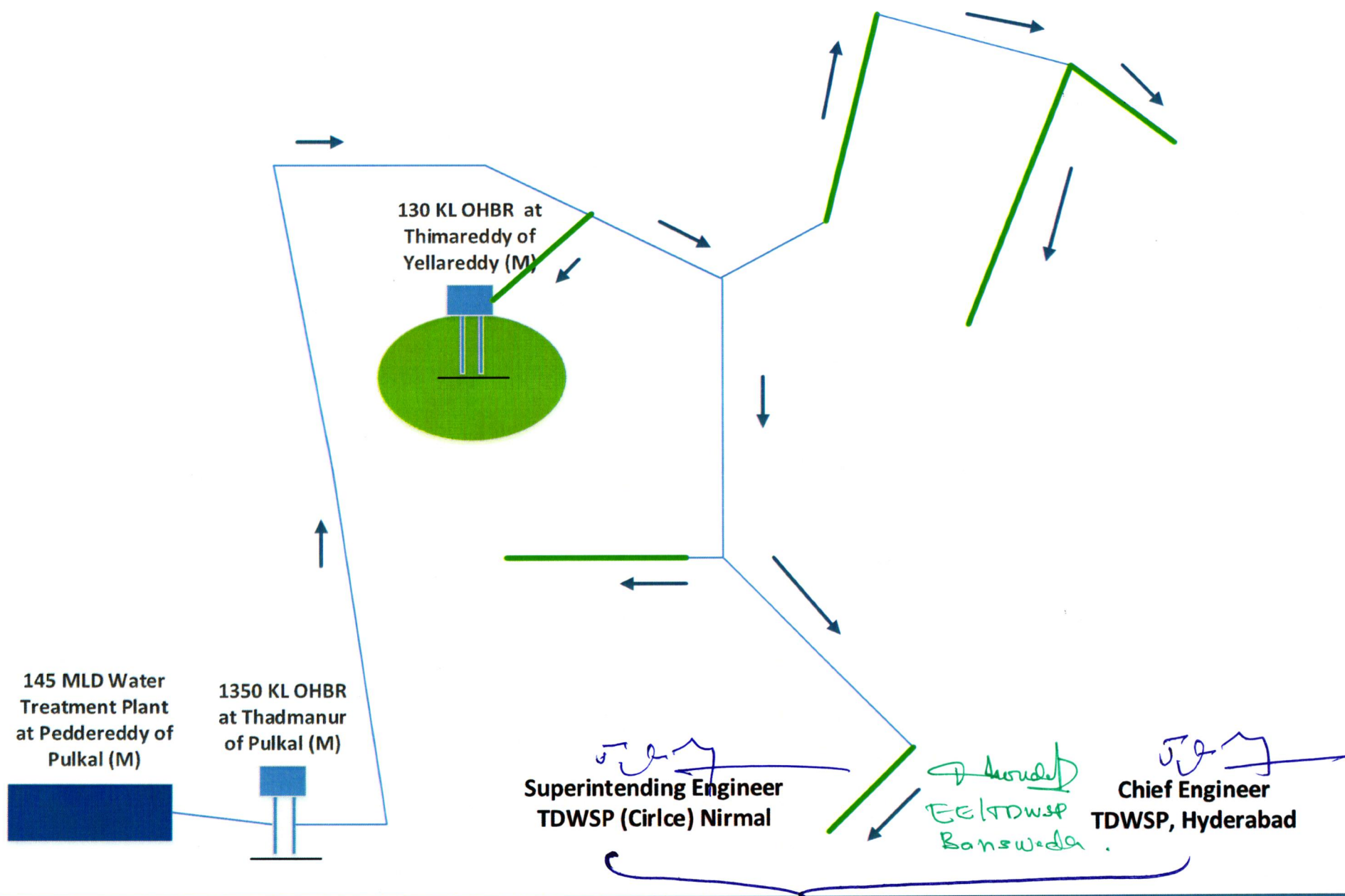
18	NIZAMABAD	BANSWADA	BANSWADA	MOHAMMEDNAGAR	PATHUR	293	7	1000	1073.225	2.0	0.215
19	NIZAMABAD	BANSWADA	BANSWADA	MAQDUMPUR	KAZAPUR	292	7	75	1173.811	0.8	0.094
20	NIZAMABAD	BANSWADA	BANSWADA	MAQDUMPUR	KAZAPUR	292	7	75	679.022	0.8	0.054
21	NIZAMABAD	BANSWADA	BANSWADA	MOHAMMEDNAGAR	PATHUR	295	7	1000	1542.744	2.0	0.309
22	NIZAMABAD	BANSWADA	BANSWADA	MOHAMMEDNAGAR	PATHUR	296	7				0.196
23	NIZAMABAD	BANSWADA	BANSWADA	MAQDUMPUR	VELLUTLA I	835	8	75	430.754	0.8	0.034
24	KAMAREDDY	GANDHARI	MUDHELLY	SINGITHAM	VELLUTLA I	835	8	75	346.012	0.8	0.028
25	KAMAREDDY	GANDHARI	MUDHELLY	SINGITHAM	VELLUTLA I	835	8	110	585.689	0.9	0.053
26	KAMAREDDY	GANDHARI	MUDHELLY	SINGITHAM	NO-DATA	7777	8	110	184.449	0.9	0.017
27	NIZAMABAD	BANSWADA	BANSWADA	MAQDUMPUR	VELLUTLA I	834	8	160	1865.663	1.0	0.187
TOTAL									26783.391		4.277


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 Nirmal Circle.


 CE/TDWSP/
 Banswada.

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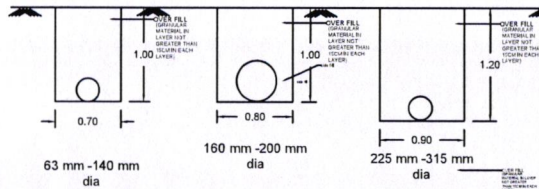
Telangana Drinking Water Supply Project- Segment 12 of Sub Segment Yellareddy-12-1



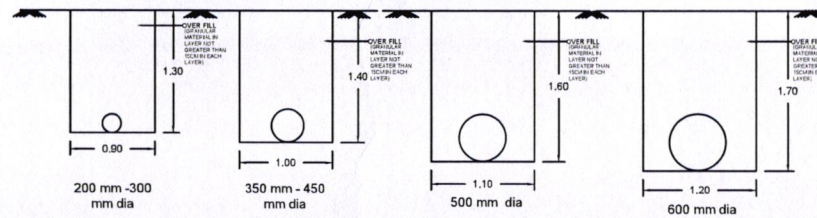
TELANGANA DRINKING WATER SUPPLY PROJECT SEGMENT-12 NIZAMABAD DIST.

SECTION SHOWING THE PIPELINE CROSS SECTIONS

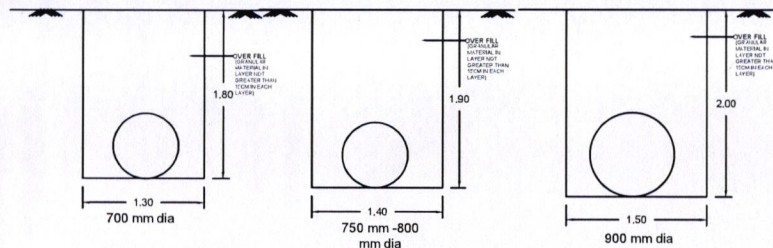
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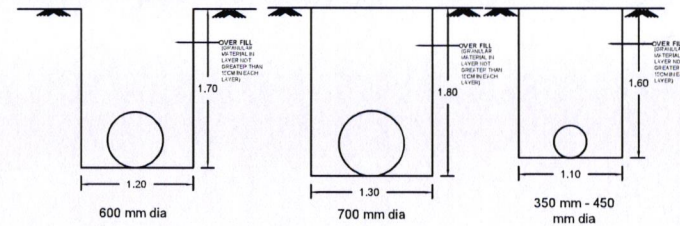
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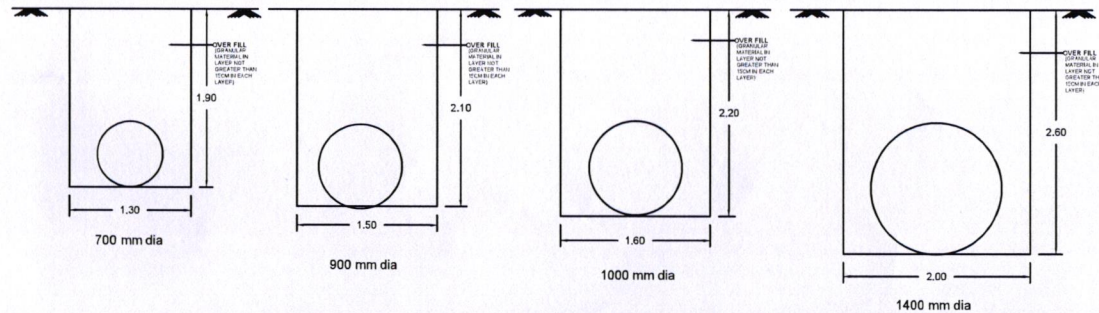
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BWSC PIPES:



MS PIPES:



ALL DIMENSIONS ARE IN METRES

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 SUPERINTENDING ENGINEER
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 CHIEF ENGINEER
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Samswada