

**GOVERNMENT OF TELANGANA  
 TELANGANA DRINKING WATER SUPPLY PROJECT  
 Rural Water Supply & Sanitation Department**

**TELANGANA WATER GRID**



**L&T Construction - Water, Smart World & Communication  
 CHENNAI**

<b>CLIENT:</b> RURAL WATER SUPPLY AND SANITATION DEPARTMENT (WATER GRID), TELUNGANA.	<b>CONSULTANT :</b> WAPCOS LIMITED
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<b>PROJECT :</b>	PROVIDING DRINKING WATER TO HABITATIONS IN KOMARAMBHEEM ASIFABAD SEGMENT IN ADILABAD DISTRICT
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<b>SUPPLIER / CONTRACTOR:</b>	L&T Construction, Water, Smart World and Communication
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<b>JOB Ref. No. :</b> LE150883	<b>TITLE :</b>																
<table border="1"> <thead> <tr> <th></th> <th>NAME</th> <th>SIGN</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>DSGN</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CHKD</td> <td></td> <td></td> <td></td> </tr> <tr> <td>APPD</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		NAME	SIGN	DATE	DSGN				CHKD				APPD				<b>DESIGN OF GLBR - 10KL CAPACITY          AT NARNOOR MANDAL</b>
	NAME	SIGN	DATE														
DSGN																	
CHKD																	
APPD																	
	<b>KOLAMGUDA</b>																

<b>DOC./DRG. No.</b>	<b>SIZE</b>	<b>REV.</b>
L E 1 5 0 8 8 3 - C - W S - R W - D C - 1 5 0 1	A4	A

<b>RELEASED FOR</b>	<input type="checkbox"/> PRELIMINARY	<input type="checkbox"/> INFORMATION	<input checked="" type="checkbox"/> APPROVAL	<input type="checkbox"/> CONSTRUCTION
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**Submitted sir,**

**Sub:** RWS&S-TDWSP- Kolamguda 10KL GLBR in Narnoor Mandal–Komarambheem Asifabad Segment-Adilabad District-Designs -Approval-Reg.

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Kindly puruse the Designs of the following 10KL Clear Water GLBR at Kolamguda (V), Narnoor (M), submitted by the Executive Engineer TDWSP Asifabad Division, Adilabad district for approval.

### 1. 10KL GLBR.

The Executive Engineer TDWSP Asifabad Division has submitted Structural Designs & Drawings of 10KL GLBR based on the field conditions and as per the estimate provisions, the structural designs & drawings for the above structure is verified with RWS&S standard Type Designs and submitted for approval.

The following design parameters were considered:

- Capacity : 10KL
- Net SBC of Soil : 10.0 t/sqm
- Grade of concrete & Steel : M 30 & Fe 500
- Dia of GLBR Inner to Inner : 3 .00m
- Sidewall Height : 1.96mts
- Sidewall Thickness:200mm
- Top Slab thickness: 150 mm
- RaftSlab thickness: 200mm

As per the above parameters the structural design and drawings of the clear water GLBR is verified, as per similar Type designs available and approved by the RWS&S Department considering the SBC and type of soil, duly following IS codes, IS: 456-2000, SP:16, 34, IS:3370 and IS 1893-2002 (seismic codes).The sizes and steel proposed in the designs and drawings of all components are safe and sufficient.

The additional points noted after checking the designs are:

- Detailed Estimate of the Structure with these specifications has to be prepared and compared with the provision made in sanctioned estimate. Such that deviation if any is within authorized limits. If any deviations noticed, the Estimate should be submitted for obtaining approval from the Competent Authority.


Subject to approval a draft memo addressed to the EE, TDWSP Asifabad Division , for communicating approved Structure is put up for kind perusal and approval.

  
AEE (Designs)

TDWSP, Nirmal Circle

  
DEE (Designs)

TDWSP, Nirmal Circle

  
Superintending Engineer,  
TDWSP, Nirmal Circle

# DESIGN CALCULATION

## PROJECT TITLE

PROVIDING DRINKING WATER TO HABITATIONS  
IN KOMARAMBHEEM ASIFABAD SEGMENT  
IN ADILABAD DISTRICT (30 MLD WTP)

## UNIT

10 KL GLBR

DCI NO: - LE150883-C-WS-RW-DC-1442  
&  
LE150883-C-WS-RW-NU-1443

## PRINCIPAL CLIENT

RURAL WATER SUPPLY  
AND  
SANITATION DEPARTMENT,  
TELANGANA

## CONTRACTOR

L&T CONSTRUCTION  
WATER & EFFLUENT TREATMENT SBG

## DESIGN OF GLBR

### BASIC DATA

Diameter = 3 m  
Water depth = 1.6 m  
Free board = 0.30 m

### CAPACITY CHECK

Required capacity = 10 KL

Capacity of suction

Clear diameter = 3 – 2 x plaster thickness  
= 3 – 2 x 0.012  
= 2.976 m

Water depth = 1.6 m

Volume =  $(\pi * d * d / 4) * H$   
=  $(\pi * 2.976 * 2.976 / 4) * 1.6 = 11.13 \text{ m}^3$  (including dead storage)

Volume-Dead storage = 11.13-1.04 = 10.09

Net volume = 10.09 m<sup>3</sup> > 10 m<sup>3</sup> hence O.K.

ELEMENT:

Inside tank: (1) Cylindrical wall  
(2) Top Slab

SBC – 10 t/m<sup>2</sup>

GROUND WATER TABLE: NO GWT

GLBR : 10 KL				FORMULA			
PROJECT: PROVIDING DRINKING WATER TO HABITATIONS IN KOMARAMBHEEM ASIFABAD SEGMENT IN ADILABAD DISTRICT (30 MLD WTP)	GLBR AT		CLIENT				
	Different village		RURAL WATER SUPPLY AND SANITATION DEPARTMENT, TELANGANA				
STRUCTURE	DESIGN CALCULATION FOR GLBR		DATE		REV		
			2/2/2016		0		
<b>DESIGN CALCULATION</b>							
<b>DATA</b>							
<b>General Data</b>							
Required Capacity of Sump	Sumpcap	10.000	m3	As per tender Specification			
<b>Location</b>							
<b>Hydraulic Features</b>							
Ground Level	GL	0.00	m				
Dead Storage	Ds	0.15	m				
Free Board	FB	0.30	m				
Basic Shape : Circular with flat slab							
<b>Material Data</b>							
unit weight of concrete	uwc	25.000	kN/m3				
unit weight of water	uww	10.000	kN/m3				
unit weight of plaster	uwp	21.000	kN/m3				
<b>load Data</b>							
live load at roof slab	llf	1.500	kN/m2				
Finish load	Fl	1.000	kN/m2				
<b>Geometry Data</b>							
Diameter	Dia	3.00	m				
Depth of tank above GL		0.90					
Depth of tank below GL		1.00					
Water depth : With Dead storage	Wd	1.60	m				
Top Slab thickness	Tsthk	0.150	m				

Bottom slab thickness	Bsthk	0.200	m	
plaster thickness	pt	0.012	m	
<b>Permissible stress ( As per IS 456 &amp; IS 3370)</b>				
Concrete				
Concrete grade -FCK	fck	30	N/mm2	
per. stress in con. for direct comp	fckc	8.0	N/mm2	
per. stress in con in com.due to bending	fckbc	10.0	N/mm2	
per. stress in con. for direct tension	fckt	1.5	N/mm2	
per. stress in con. In ten due to bending	fcktb	2.0	N/mm2	
modulus of elasticity for container	em	2.74E+04	N/mm2	=5000*(fck)^0.5*100
Reinforcement	fy	415	N/mm2	
per. Ten. str.- steel tension due to bending	fyc	130	N/mm2	
per. Ten. str.- steel tension due to direct ten	fyuc	130	N/mm2	
Modular ratio	md	9.33		
Dimension for minimum steel	Dmin	15.0	m	
Mass & Wt relation factor	g	9.810		
<b>[A] CAPACITY OF CONTAINER</b>				
<b>Volume Calculation</b>				
Water Depth with Dead Storage	Wdd	1.600		
Inside Diameter		3.000		
Clear Inside Diamater without plaster	Diac	2.976		
total volume	vt	11.13	m3	
dead storage	vdd	1.04	m3	
net volume	vn	10.09	m3 >	10.000 OK
<b>[B] TOP SLAB DESIGN</b>				
Concrete grade	Fck	30	N/mm2	
Steel	Fy	415	N/mm2	
Clear cover	Cv	45	mm	
Slab Diameter	Lx	3.000	m	
Slab type	St	1	Simply supported	

Width	B	1000 mm	
Depth	D	150 mm	
Maximum Bar dia	Db	10 mm	
Density of concrete	Wd	25 kN/m <sup>3</sup>	
Loading			
Live load	LI	1.5 kN/m <sup>2</sup>	
Finishing load	FI	1 kN/m <sup>2</sup>	
CALCULATION			
Calculation of loading			
Self wt ( Dead load)	DI	3.75 kN/m <sup>2</sup>	
Total Load	TI	6.25 kN/m <sup>2</sup>	
Effective depth	De	100 mm	
Bending Moment	Bm	1.758	kN-m
Modular ratio		9.33	
K	k	0.42	
j = 1-k/3	j	0.9	
Ast		157.1	mm <sup>2</sup>

Provide : 10 dia - 200 c/c

[C] CYLINDRICAL WALL

inner diameter	cyid	3.000	m
top thickness	cytt	0.150	m
bottom thickness	cybt	0.150	m
Water depth	cyh	1.600	m
coefficient of constant height	cyc	0.000	
free board		0.300	m

height of wall fir design	cyhh	1.600	m
increment in thickness	cyith	0.000	m

Hoop Force ; Wall free at Top and hinge at bottom condition

$$F = c_{oe} \times H \times D / 2$$

F= Hoop force

H = Height of water above that section  
 D = Diameter of wall at that section

Ration  $H^2/DT$  5.689  
 Enter Value for Auto serach 8.000

h

hoop force

	sr. no	depth from top in meter	thickness at section mm	coeffient	hoop force in wall = Coe. X rad * height * unit wt of liquid kN	area of steel required = force / 1300 in cm2	actual tensile stress in concrete = force/(thk*wid th*m*ast)	Minimum Area of steel in mm2 on each face
Minimum % steel as per IS 3370-2009	1	0.160	0.150	0.010	0.2	2	0.002	180
	2	0.320	0.150	0.106	2.6	20	0.016	180
	3	0.480	0.150	0.227	5.4	42	0.035	180
Maximum Dimension	4	0.640	0.150	0.347	8.3	64	0.053	180
3.000	5	0.800	0.150	0.465	11.2	86	0.071	180
Permissible dimension for 0.24 % steel	6	0.960	0.150	0.565	13.6	104	0.087	180
15.000	7	1.120	0.150	0.632	15.2	117	0.097	180
Minimum Steel	8	1.280	0.150	0.631	15.2	117	0.097	180
0.240	9	1.440	0.150	0.533	12.8	98	0.082	180
	10	1.600	0.150	0.317	7.6	58	0.049	180
	sr. no	area of steel requrd	dia of bar	bar spacing	area of steel prod			
	1	180.000	10	200	785			
	2	180.000	10	200	785			
	3	180.000	10	200	785			
	4	180.000	10	200	785			
	5	180.000	10	200	785			
	6	180.000	10	200	785			
	7	180.000	10	200	785			
	8	180.000	10	200	785			
	9	180.000	10	200	785			
	10	180.000	10	200	785			

weight of wall									
straight part	cyspw	59.4	kN						$=P l ()*(c_{yid}+c_{ytt}) * c_{yh} * c_{ytt} * u_{wc}$
tapered part	cytpw	0.0	kN						$=P l ()*(c_{yid}+c_{ytt}+(c_{ybt}-c_{ytt}/3) * c_{yh} * (1-c_{yc}) * (c_{ybt}-c_{ytt})/2 * u_{wc}$
plaster	cyppw	4.5	kN						$= (c_{yid}-p_t) * P l () * p_t * (t_{rdd}+c_{yh}+m_{rdd}/2-c_{yxa}) * u_{wp}$
total weight	tfcy	63.9	kN						$= c_{yspw}+c_{ytpw}+c_{yppw}$
Maximum moment in wall									
	sr. no	depth from top in meter	thickness at section	coefficient	moment in wall = Coe. X height*3 <sup>2</sup> unit wt of liquid	effective depth	Aera of steel required	Minimum Area of steel in mm2	
Minimum % steel as per IS 3370-2009	1	0.160	0.150	0.00013	0.005	0.095	0	180	
	2	0.320	0.150	0.00046	0.019	0.095	2	180	
	3	0.480	0.150	0.00105	0.043	0.095	4	180	
Maximum Dimension	4	0.640	0.150	0.00221	0.091	0.095	8	180	
#REF!	5	0.800	0.150	0.00364	0.149	0.095	13	180	
Permissible dimension for 0.24 % steel	6	0.960	0.150	0.00500	0.205	0.095	18	180	
15.000	7	1.120	0.150	0.00535	0.219	0.095	20	180	
Minimum Steel	8	1.280	0.130	0.00287	0.118	0.095	11	180	
#REF!	9	1.440	0.150	-0.00463	-0.190	0.095	-17	180	
	10	1.600	0.150	-0.01979	-0.811	0.095	-73	180	
	sr. no	area of steel requd	dia of bar	bar spacing	area of steel prod	distance			
	1	180.000	10	200	393	0.160			
	2	180.000	10	200	393	0.320			
	3	180.000	10	200	393	0.480			
	4	180.000	10	200	393	0.640			
	5	180.000	10	200	393	0.800			
	6	180.000	10	200	393	0.960			
	7	180.000	10	200	393	1.120			
	8	180.000	10	200	393	1.280			
	9	180.000	10	200	393	1.440			
	10	180.000	10	200	393	1.600			
Vertical steel									
as compression only, I provide min r/f		0.240	%						
area of steel required total on both face		3.600	cm2						

## FOUNDATION DESIGN

WALL FOOTING DESIGN			
PROJECT: ADILABAD W.S.S		P16-2	
UNIT : 10 KL GLBR			
WALL TYPE 1		W1	
BASIC DATA			
Density of water	denwt	10	kN/m3
Density of soil	denso	18	kN/m3
Density of concrete	decon	25	kN/m3
Angle of Repose	Phi	30	degree
Safe bearing capacity of soil	Sbc	100.0	kN/m2
Concrete grade	Fck	30	N/mm2
Steel grade	Fy	415	N/mm2
Depth below GI	Dbg	1.00	m
Water depth	wtd	1.60	m
free board	fb	0.30	m
Wall above Ground		0.90	m
Clear cover	Cv	50	mm
Maximum size of bar dia	Db	12	mm
Water depth with free board	Wd	1.90	m
minimum % steel	pt	0.24	%
Moment			
Due to Water	Mtw	1.00	kN-m ( From Analysis Result)
Wt from top dome/slab/column/wall	Slabwt	5.00	kN-m
Wall geometry			
Straight portion	lb	1.900	m
Tapered portion	lc	0.000	m
	tb	0.150	m
	td	0.150	m
Footing geometry			
Toe projection	ht	0.250	m
Heel straight projection	hh1	0.450	m
Heel tapered projection	hh2	0.000	m
Thickness at toe (free end)	tta	0.200	m
Thickness at toe (fwall face)	tth	0.200	m
Thickness at heel (wall end)	tha	0.200	m
Thickness at heel (freel face)	thb	0.200	m
Total Height of Wall	TIw	1.900	m
Total length of wall footing	wf	0.850	m

**CASE 1 : TANK FULL CONDITION WITH NO SOIL OUTSIDE**

Total load & Moment calculation

Taking moment @ toe

Component		Wt kN W	Lever Arm m Dist	Moment kN-m W * dist
Wall Straight portion	W1	7.13	0.33	2.32
Wall Tapered portion	W2	0.00	0.25	0.00
Walkway/slab	P	5.00	0.33	1.63
<b>Footing</b>				
Footing : toe	W3	1.25	0.13	0.16
Footing center	W4	0.75	0.33	0.24
Footing : heel (straight)	W5	2.25	0.63	1.41
Footing : heel ( tapered)	W6	0.00	0.85	0.00
Water	W7	8.55	0.63	5.34

Total downward load 24.93 11.09

Total restoring moment @ toe TRM 11.1 kN-m  
 Total over turning moment 1.0 kN-m  
 F.S.against over turning 11.1

Check for over turning Hense o.k

Total moment due to vertical load Tmv 11.1 kN-m  
 Total moment due to horizontal load Tmh 1.0 kN-m  
 Total vertical load TPv 24.9 kn  
 Net Moment Tmn 10.1 kN-m  
 M/p E 0.40 m  
 Ecc Ecc 0.020 m  
 b/6 Aec 0.14 m  
 Net moment From ECC Mdg 0.503

**Property of footing**

Width of footing 1.00 m  
 Depth of footing 0.85 m  
 Footing Area Fare 0.85 m2  
 Modulus of section Fz 0.12 m3

**Pressure distribution**  
 Pressure due to direct load =P/A prea 29.32 kN/m2  
 Pressure due to moment =M/Z Preb 4.17 kN/m2

**Pressure**  
 Maximum pressure - P/A + M/Z Pmax 33.50 kN/m2  
 Minimum pressure - P/A + M/Z Pmin 25.15 kN/m2

Check for SBC

Maximum pressure < SBC OK  
 Minimum presure > 0 OK  
 Pressure difference 8.346  
 Pressure difference / m 9.819  
 Pressure at outer Wall face - A preow 31.04 kN/m2  
 Pressure at inner Wall face B preiw 29.57 kN/m2  
 Pressure at point C preiw1 25.15 kN/m2

**Design of Toe - At Point A**

Moment at face of outer wall			
Due to rectangle diagram	Mreco	0.97	kN-m
	Mtrio	0.05	kN-m
Total moment due to upward pressure		1.02	kN-m
Net moment at A from Toe side	Toem	1.02	kN-m
Thickness at toe		200	mm
Effective depth	Def toe	144	mm
Ast required =		60.61	mm <sup>2</sup>
Check for minimum steel			
top		240	mm <sup>2</sup>
bottom		0	mm <sup>2</sup>
Design Steel			
Main steel - Top		240	mm <sup>2</sup>
Main steel - bottom		61	mm <sup>2</sup>
Distribution steel - top		240	mm <sup>2</sup>
Distribution steel - bottom		0	mm <sup>2</sup>

**Design of heel : At point B & C**

<b>Design at point B</b>			
Due to rectangle diagram (upward)	Mrecl	2.55	kN-m
	Mtril	0.15	kN-m
Total Upward moment		2.70	kN-m
Due to water (down ward)		1.92	kN-m
Net downward moment at B from heel side	heelm	0.77	kN-m
Thickness Provided		200	mm
	defheel	144	mm
Ast required =		46	mm <sup>2</sup>
Check for minimum steel - straight portion			
top		240	mm <sup>2</sup>
bottom		0	mm <sup>2</sup>
Design Steel			
Main steel - Top		240	mm <sup>2</sup>
Main steel - bottom		0	mm <sup>2</sup>
Distribution steel - top		240	mm <sup>2</sup>
Distribution steel -bottom		0	mm <sup>2</sup>

<b>Design at point C</b>			
Due to rectangle diagram (upward)	Mrecl	0.00	kN-m
	Mtril	0.00	kN-m
Total Upward moment		0.00	kN-m
Due to water (down ward)		0.00	kN-m
Net downward moment at B from heel side	heelm	0.00	kN-m
Thickness Provided		200	mm
	defheel	144	mm
Ast required =		0	mm <sup>2</sup>
Check for minimum steel - tapered portion			
Average thickness	thav	0.20	m
top		240	mm <sup>2</sup>
bottom		0	mm <sup>2</sup>
Design Steel			
Main steel - Top		240	mm <sup>2</sup>
Main steel - bottom		0	mm <sup>2</sup>
Distribution steel - top		240	mm <sup>2</sup>
Distribution steel -bottom		0	mm <sup>2</sup>

SUMMARY

Pressure Check

1>	P/A + M/Z	33.5	<	100	OK
2>	P/A - M/Z	25.2	>	0	OK

Reinforcement

	AstR	dia	spc	+	dia	spc	Astp	
<b>Toe</b>								
Top - main	240	10	200	0	0	0	393	OK
Bottom main	61	10	200	0	0	0	393	OK
Top - Dist	240	10	200	0	0	0	393	OK
Bottom - Dist	0	10	200	0	0	0	393	OK
<b>Heel Straight portion</b>								
Top - main	240	10	200	0	0	0	393	OK
Bottom main	0	10	200	0	0	0	393	OK
Top - Dist	240	10	200	0	0	0	393	OK
Bottom - Dist	0	10	200	0	0	0	393	OK
<b>Heel tapered portion</b>								
Top - main	240	10	200	0	0	0	393	OK
Top - Dist	240	10	200	0	0	0	393	OK
Bottom - Dist	0	10	200	0	0	0	393	OK

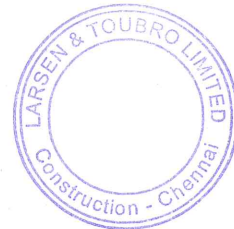
"Designs Vetted"



*Geetha*  
Asst. Executive Engineer  
TDWSP Asifabad



*Dy*  
Dy. Executive Engineer  
TDWSP Asifabad



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Executive Engineer  
TDWSP Asifabad

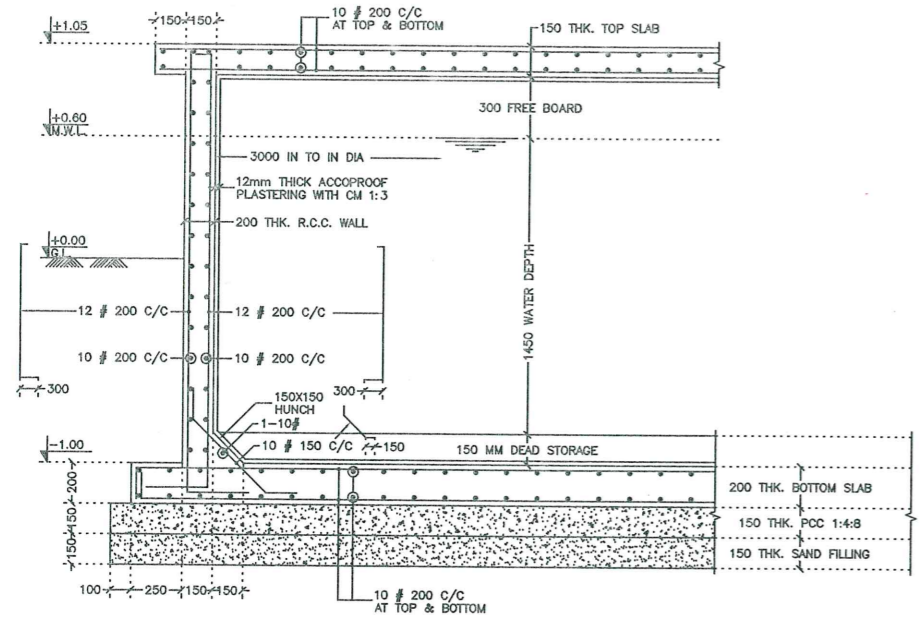
APPROVED  
*M20/4/16*  
SE, NIRMAL

NAME OF VILLAGE				
KOLAMGUDA	MADHARAMGUTTA	GONDUGUDA	GOVARGUDA	BABAPUR

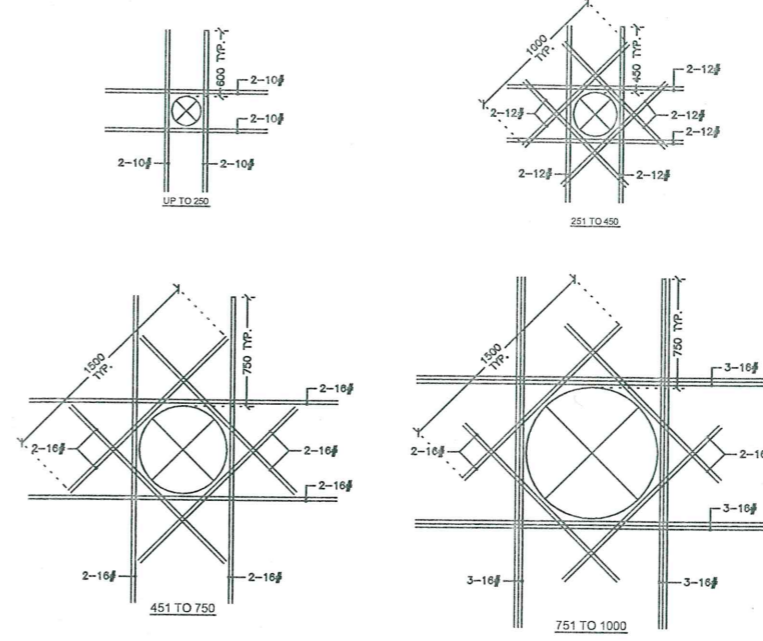
- NOTES-
- 1 ALL DIMENSION ARE IN MM AND LEVELS ARE IN METER.
  - 2 ALL CONCRETE MIX M-30 WITH MAXIMUM FREE WATER CEMENT RATIO OF 0.45 AND MAXIMUM CEMENT CONTENT OF 400kg/m<sup>3</sup> FOR WATER RETAINING STRUCTURE
  - 3 ALL CONCRETE SHALL BE MACHINE MIXED AND MACHINE VIBRATED
  - 4 # - INDICATE HYSD-TMT BAR FE-415 GRADE 1 CONFORMING TO IS 1785-LATEST REVISION
  - 5 CLEAR COVER TO MAIN STEEL 50mm IN BOTTOM SLAB & 25mm IN BEAM, TOP SLAB & WALL
  - 6 FOUNDATION SHALL REST ON IN-SITU SOIL AND IT SHALL NOT BE ON FILLING MATERIAL I.e. MADE UP SOIL OR HIGHLY COMPRESSIBLE SOIL
  - 7 BACK FILLING SHALL BE DONE IN WELL COMPACTED AND WELL WATER LAYER NOT EXCEEDING 150mm IN DEPTH
  - 8 SBC CONSIDERED IN DESIGN IS 10 T/M<sup>2</sup> & NO GROUND WATER TABLE.
  - 9 INLET & OVERFLOW PIPE SHALL BE DECIDED AS PER SITE CONDITION
  - 10 LOCATION & LEVELS OF INLET,OUTLET & OVERFLOW PIPE SHALL BE VERIFY WITH ENGINEER INCHARGE BEFORE EXECUTION

SCHEDULE OF PIPE	
INLET PIPE SIZE	-
OUTLET PIPE SIZE	-
OVER FLOW PIPE SIZE	-

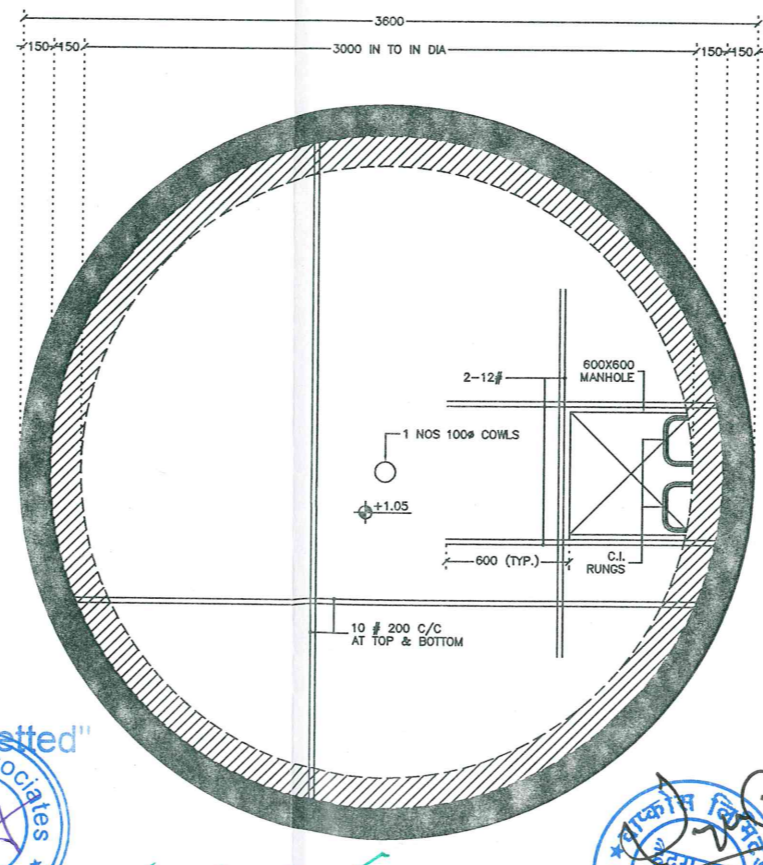
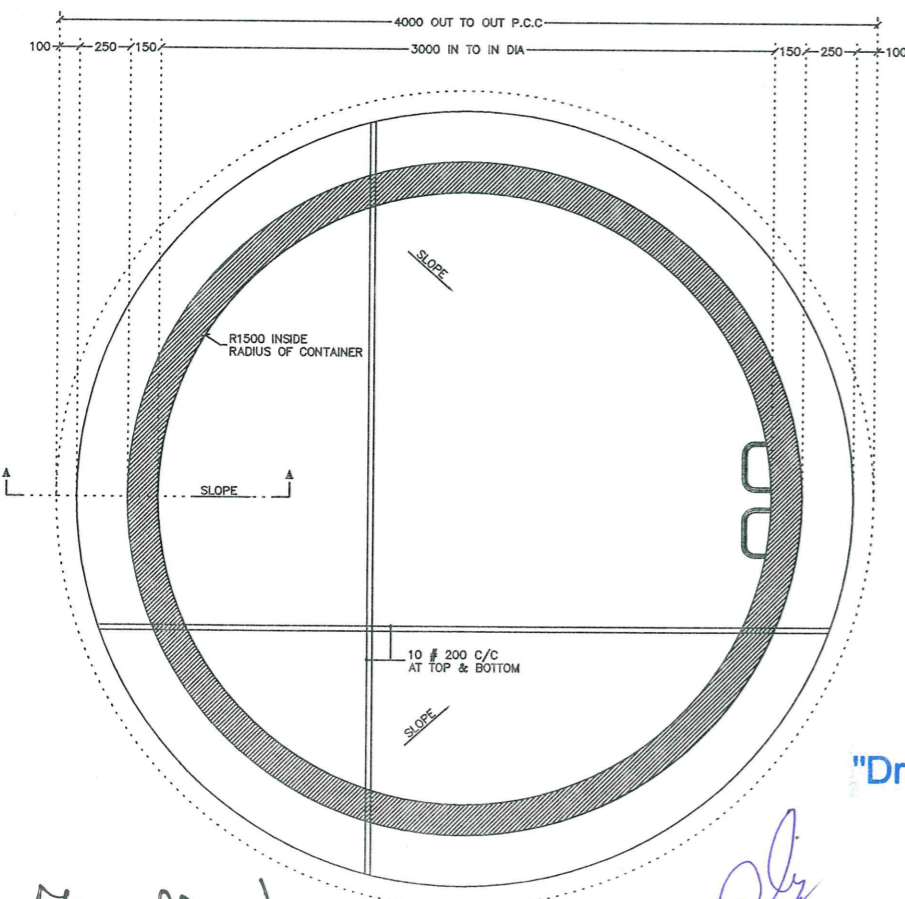
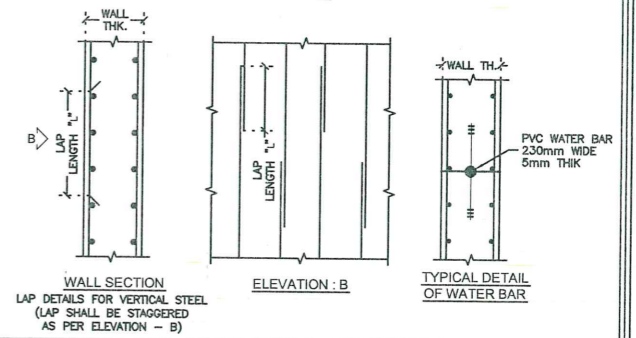
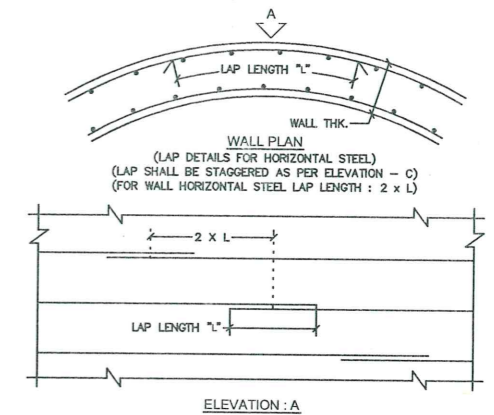
LAP LENGTH SECHDULE	
DIA OF BAR	LAP LENGTH "L" IN mm
8	320
10	400
12	480
16	640
20	800
25	1000



SECTION : A - A



TYPICAL DETAIL FOR EXTRA STEEL BAR AT CUT-OUT



APPROVED  
SE, NIRMAL



REV. No	DESCRIPTION	DATE	DESIGNED	DRAWN	CHECKED	APPROVED
A	FOR APPROVAL	02/02/16	HMP	NSP	RMM	-

**L&T Construction**  
Water, Smart World & Communication.

CLIENT: RURAL WATER SUPPLY AND SANITATION DEPARTMENT, TELANGANA. CONSULTANT: -

PROJECT: PROVIDING DRINKING WATER TO HABITATIONS IN KOMARAMBHEEM ASIFABAD SEGMENT IN ADILABAD DISTRICT

SUPPLIER / CONTRACTOR: **L&T Construction**  
Water & Effluent Treatment SBG

JOB No.:	NAME	SIGN	DATE	TITLE:	SCALE
LE150883	HMP		02-02-16	10KL CAPACITY GLBR AT DIFFERENT VILLAGE (STRUCTURAL DETAILS)	1:25
DRWN	NSP		02-02-16		PROJECTION
CHKD	RMM		02-02-16		
APPD	-		02-02-16		

DRAWING No. LE150883-C-WS-RW-RC-1501  
COMP. DATA : P16-02\_79-02-01 SHEET 1 OF 1

RELEASED FOR  PRELIMINARY  TENDER  INFORMATION  APPROVAL  CONSTRUCTION

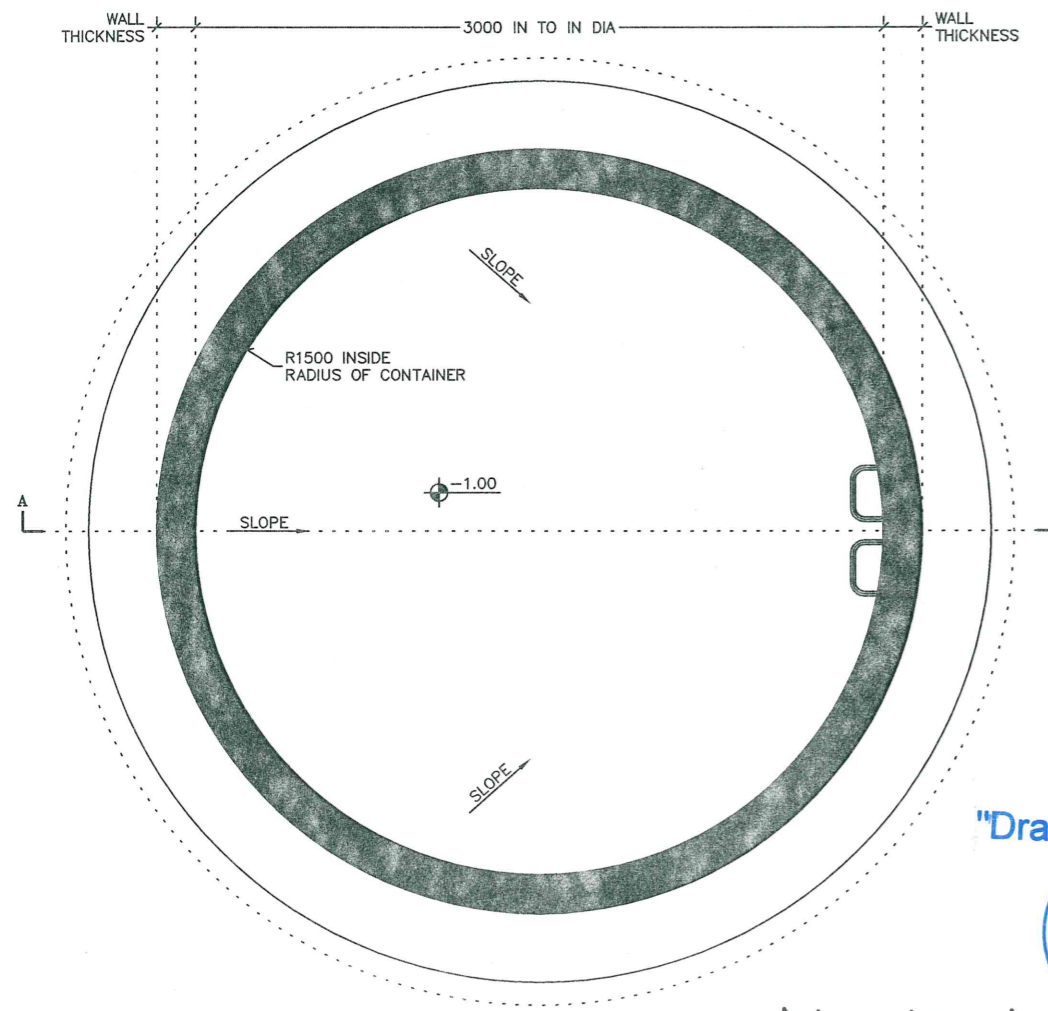
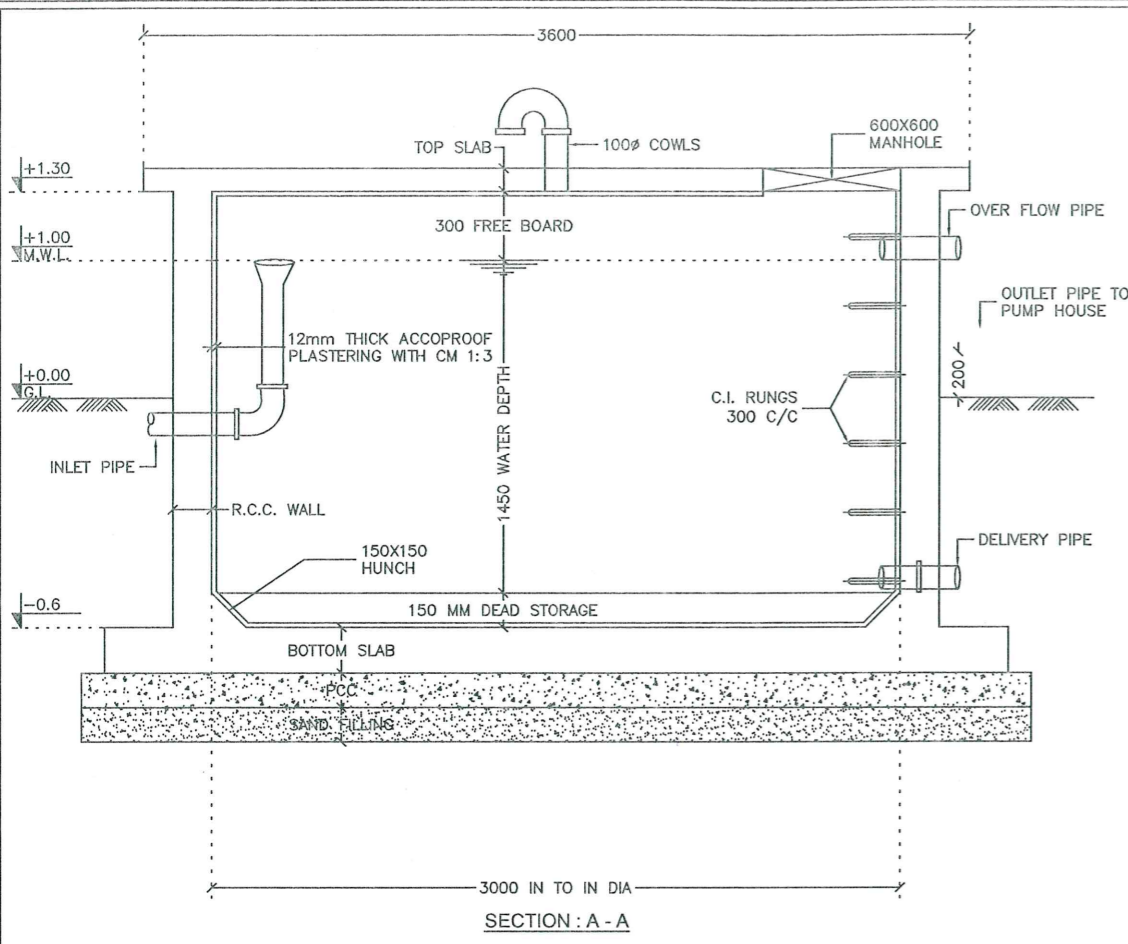
Asst. Executive Engineer  
TDWSP Asifabad

Dy. Executive Engineer  
TDWSP Asifabad

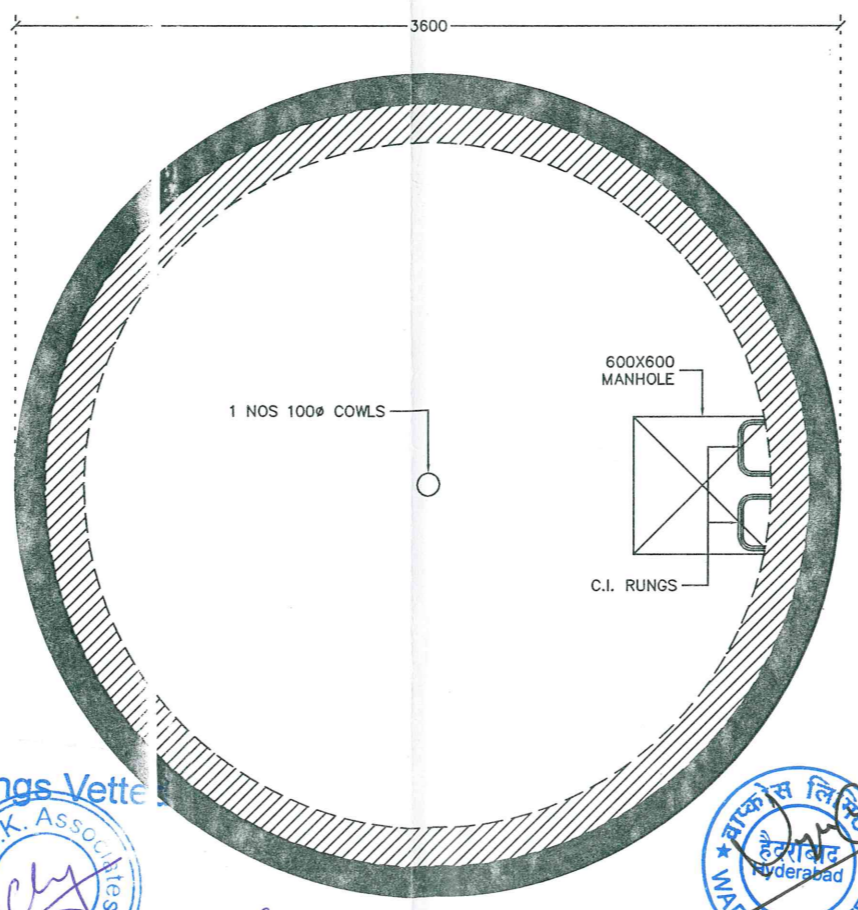
Executive Engineer  
TDWSP Asifabad

"Drawings Vetted"





BOTTOM PLAN  
**Asst. Executive Engineer**  
 TDWSP Asifabad



TOP PLAN  
**Dy. Executive Engineer**  
 TDWSP Asifabad  
**Executive Engineer**  
 TDWSP Asifabad

SCHEDULE OF PIPE	
INLET PIPE SIZE	-
OUTLET PIPE SIZE	-
OVER FLOW PIPE SIZE	-

NAME OF VILLAGE				
KOLAMGUDA	MADHARAMGUTTA	GONDUGUDDA	GOVARGUDA	BABAPUR

NOTES :  
 <1> ALL DIMENSION ARE IN MM AND LEVELS ARE IN METER.  
 <2> LOCATION & LEVELS OF INLET,OUTLET & OVERFLOW PIPE SHALL BE VARIFIED WITH ENGINEER INCHARGE BEFORE EXECUTION

APPROVED  
 SE, NIRMAL



REV. No	DESCRIPTION	DATE	DESIGNED	DRAWN	CHECKED	APPROVED
A	FOR APPROVAL	02/02/16	-	PMD	RMM	-

REVISIONS

**L&T Construction**  
 Water, Smart World & Communication.

CLIENT : RURAL WATER SUPPLY AND SANITATION DEPARTMENT, TELANGANA. CONSULTANT : -

PROJECT : PROVIDING DRINKING WATER TO HABITATIONS IN KOMARAMBHEEM ASIFABAD SEGMENT IN ADILABAD DISTRICT

SUPPLIER / CONTRACTOR : **L&T Construction**  
 Water & Effluent Treatment SBG

JOB No. : LE150883 TITLE : 10KL CAPACITY GLBR AT DIFFERENT VILLAGE (GENERAL ARRANGEMENT DRAWING) SCALE 1:30 PROJECTION

NAME	SIGN	DATE
DSGN HMP		02-02-16
DRWN PMD		02-02-16
CHKD RMM		02-02-16
APPD -		02-02-16

DRAWING No. LE150883-C-WS-RW-GA-1501  
 COMP. DATA : P16-02-79-01-02 SHEET 2 OF 2

RELEASED FOR  PRELIMINARY  TENDER  INFORMATION  APPROVAL  CONSTRUCTION

