

# CONSTRUCTION OF 5MLD STP AT KWA SITE AT ELAMKULAM IN KOCHI

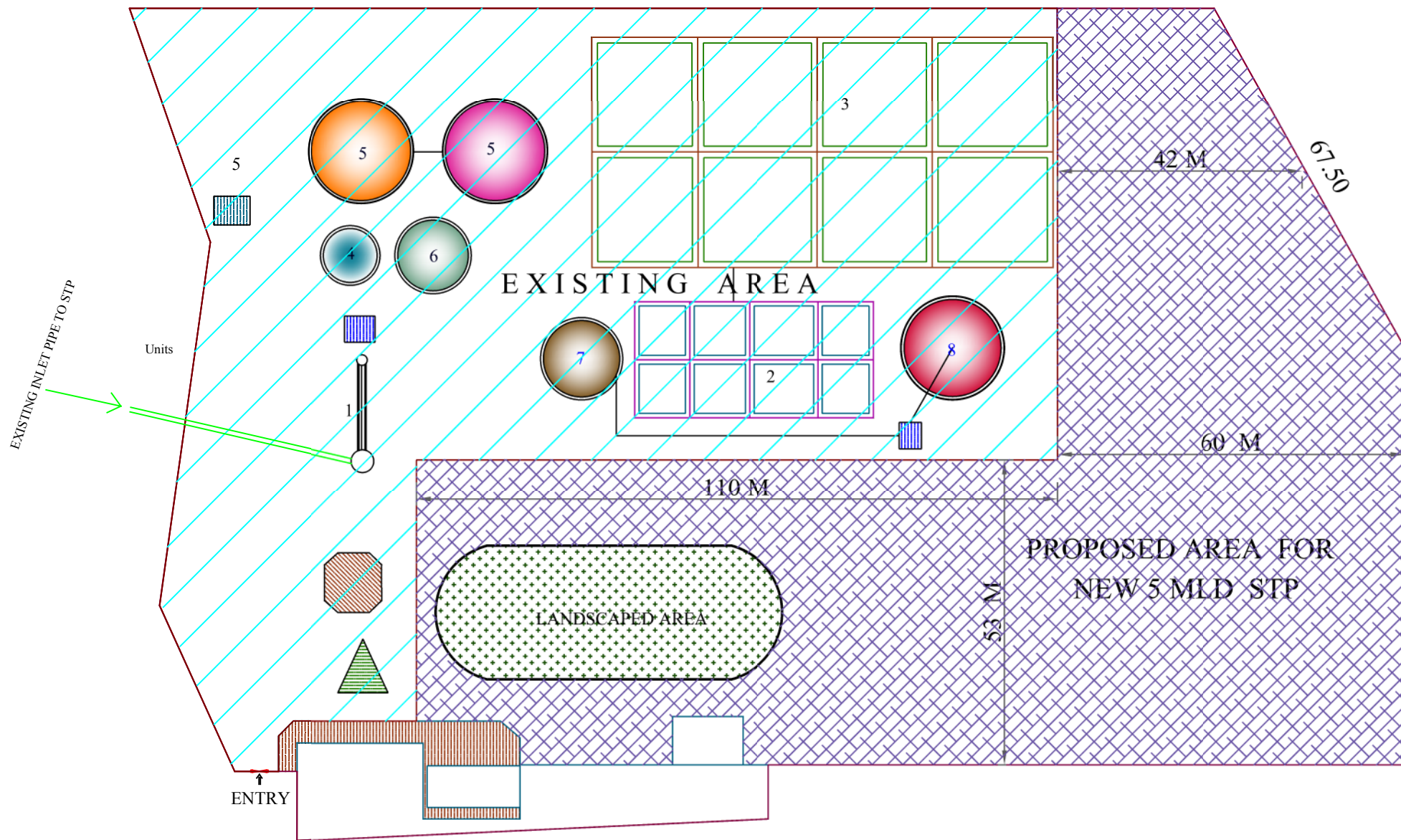
**DETAILED PROJECT  
REPORT**

**VOLUME II  
DRAWINGS**



8/5288-I, Near Kuttiady Irrigation Project Office  
Mootoli, Kakkodi P.O., Calicut – 673611  
Mob: 9446048233, 0495-4025433

# CIVIL DRAWINGS



**NOTES**

- EXISTING INLET PIPE TO STP ( PUMPING LINE)
- AREA OF EXISTING STP
- AREA FOR PROPOSED STP

**PROJECT TITLE**

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

**CLIENT**

**KERALA WATER AUTHORITY  
KOCHI**

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**CONSULTANT**

**RAM BIOLOGICALS  
CALICUT**

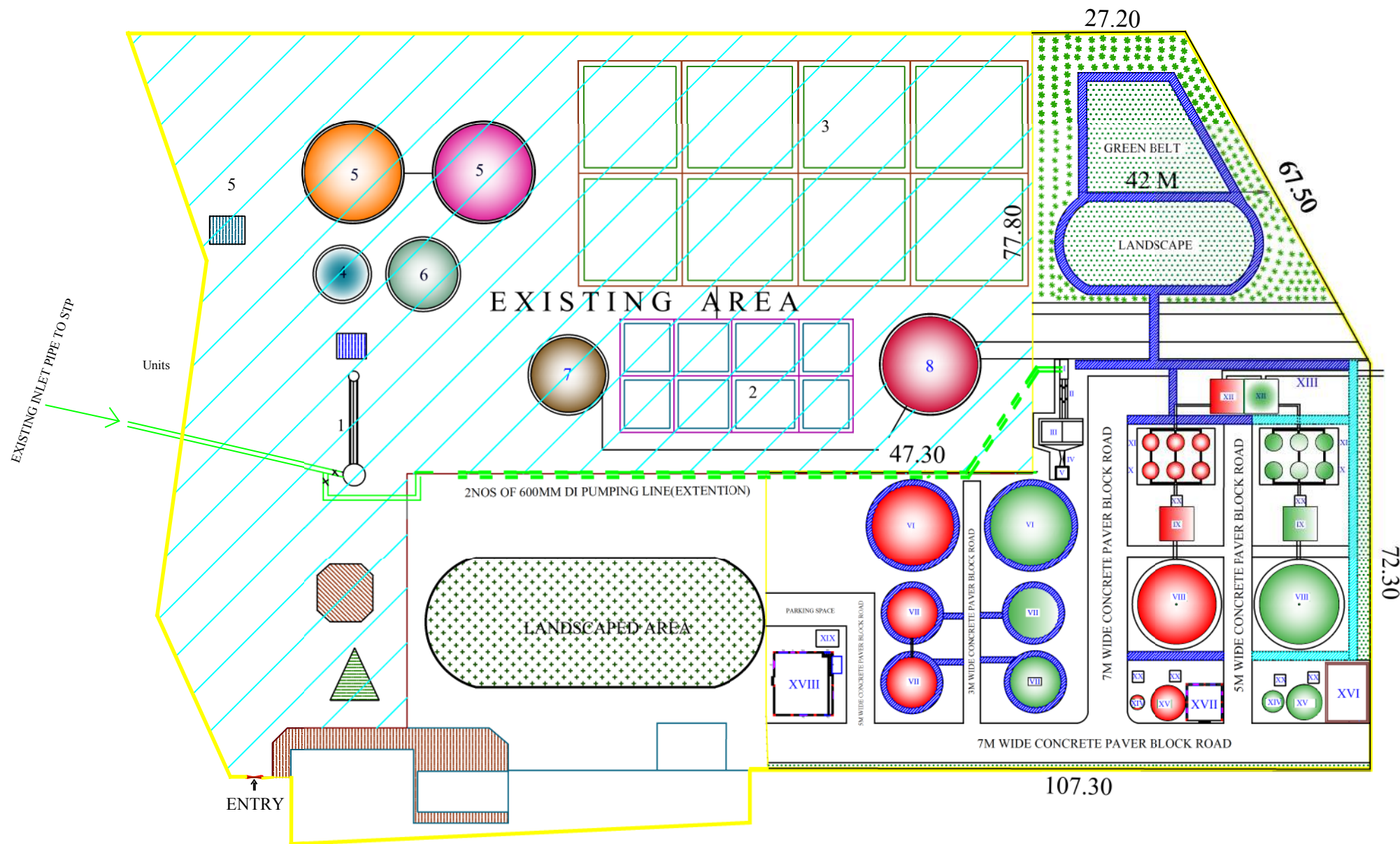
**LAYOUT OF EXISTNG SEWERAGE TREATMENT PLANT**

**DETAILS OF EXISTING UNITS**

Units	length (m)	Breadth (m)	Depth(m)
1 GRIT CHAMBER	36	0.60	1.05
2 AERATION TANK	41.5	21.7	8
3 DRYING BED	80	40	1.5
4 MIXING TANK	8.1m dia		5
5 DIGESTION TANK	18.25m dia		10
6 SEC. DIGESTION TANK	10.6m dia		5.5
7 PRIMARY SETTLING TANK	15.25 m dia		3.6
8 FINAL SETTLING TANK	19.8 m dia		5

<b>DRAWING TITLE</b> EXISTING STP LAYOUT	Rev
<b>DRAWING NO</b> RAM-KWA-STP-C-001	<b>00</b>

<b>Drawn By</b> VYSHAK P.T	<b>Sheet No</b> 01
<b>Checked By</b> SOORAJ M	<b>Sheet Size</b> A-3
<b>Date</b> 05-01-2018	<b>Scale</b> NTS



LAYOUT OF SEWERAGE TREATMENT PLANT AT ELAMKULAM

**NOTES**

- EXISTING INLET PIPE TO STP ( PUMPING LINE)
- LAYOUT OF FUTURE STP
- LAYOUT OF PROPOSED STP

**PROJECT TITLE**

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

**CLIENT**

**KERALA WATER AUTHORITY  
KOCHI**

**CONSULTANT**

**RAM BIOLOGICALS  
CALICUT**

**DRAWING TITLE**

OVERALL PLANT LAYOUT

**DRAWING NO**

RAM-KWA-STP-C-002

**Rev**

**00**

<b>Drawn By</b>	VYSHAK P.T	<b>Sheet No</b>	01
<b>Checked By</b>	SOORAJ M	<b>Sheet Size</b>	A-3
<b>Date</b>	05-01-2018	<b>Scale</b>	NTS

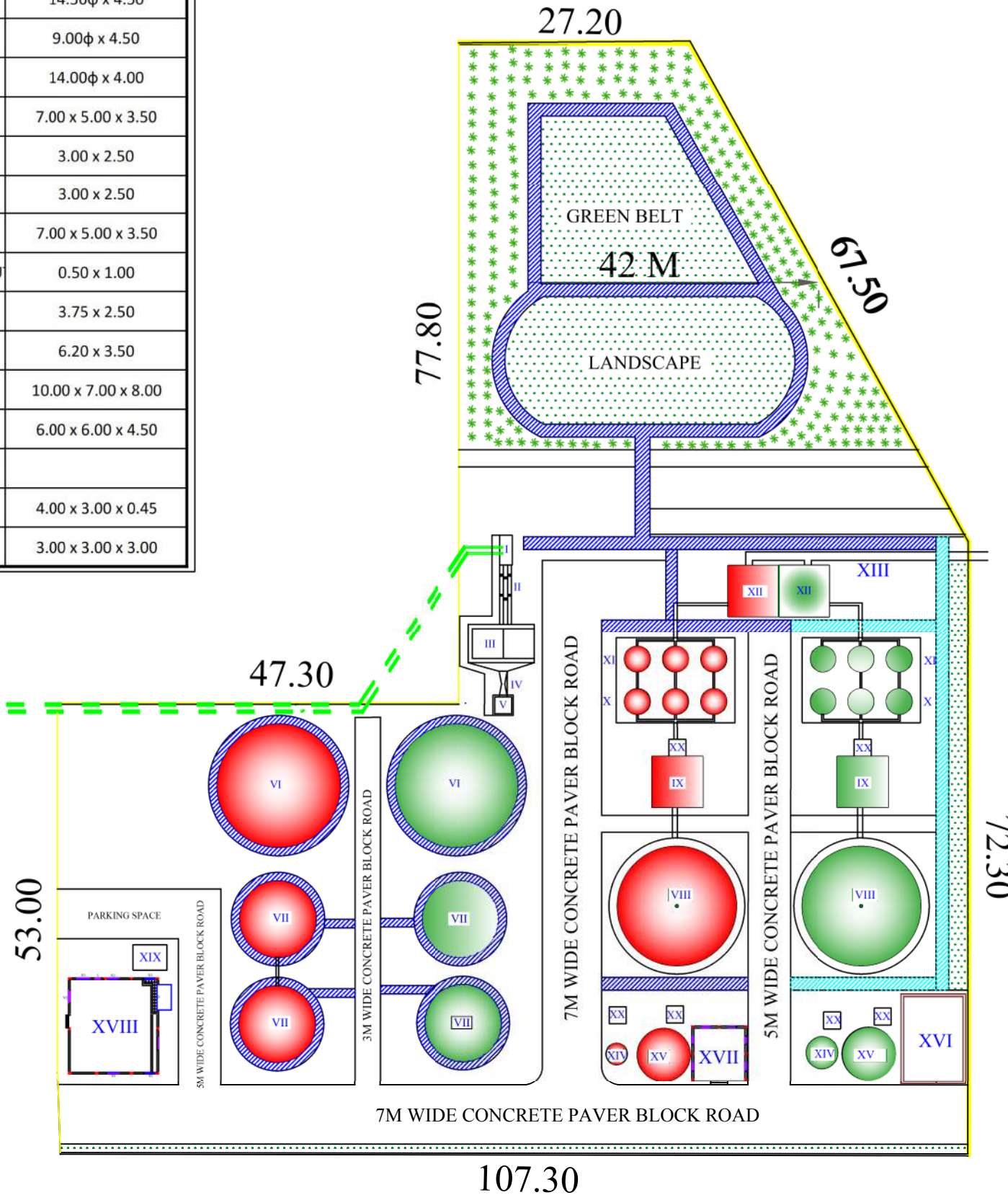
DETAILS OF PROPOSED 5MLD STP UNITS

SL NO	UNIT	SIZE	SL NO	UNIT	SIZE
I	RECEIVING CHAMBER	4.00 x 1.50 x 2.50	XI	ACTIVATED CARBON FILTER	3.00 x 2.50
II	SCREEN CHANNEL	7.00 x 0.45 x 1.00	XII	TREATED WATER TANK	7.00 x 5.00 x 3.50
III	GRIT CHAMBER	3.65 x 3.65 x 1.40	XIII	TREATED WATER TANK CHANNEL (OUTFALL)	0.50 x 1.00
IV	PARSHALL FLUME	0.83 x 0.38 x 3.00 x 1.40	XIV	SLUDGE SUMP	3.75 x 2.50
V	DISTRIBUTION CHAMBER	2.00 x 2.00 x 1.40	XV	SLUDGE THICKENER	6.20 x 3.50
VI	EQUALIZATION TANK	14.50φ x 4.50	XVI	CENTRIFUGE SHED	10.00 x 7.00 x 8.00
VII	MBBR TANK	9.00φ x 4.50	XVII	SLUDGE STORAGE YARD	6.00 x 6.00 x 4.50
VIII	SECONDARY CLARIFIER	14.00φ x 4.00	XVIII	TRANSFORMER HOUSING, CONTROL ROOM & LABORATORY BUILDING	
IX	FILTER FEED TANK	7.00 x 5.00 x 3.50	XIX	GENERATOR SHED	4.00 x 3.00 x 0.45
X	PRESSURE SAND FILTER	3.00 x 2.50	XX	PUMP HOUSE	3.00 x 3.00 x 3.00

DETAILS OF EXISTING 4. 5MLD STP UNITS

Sl.no	Units	length (m)	Breadth (m)	Depth(m)
1	GRIT CHAMBER	36	0.60	1.05
2	AERATION TANK	41.5	21.7	8
3	DRYING BED	80	40	1.5
4	MIXING TANK	8.1m dia		5
5	DIGESTION TANK	18.25m dia		10
6	SEC. DIGESTION TANK	10.6m dia		5.5
7	PRIMARY SETTLING TANK	15.25 m dia		3.6
8	FINAL SETTLING TANK	19.8 m dia		5

SL NO	UNIT	SIZE
I	RECEIVING CHAMBER	4.00 x 1.50 x 2.50
II	SCREEN CHANNEL	7.00 x 0.45 x 1.00
III	GRIT CHAMBER	3.65 x 3.65 x 1.40
IV	PARSHALL FLUME	0.83 x 0.38 x 3.00 x 1.40
V	DISTRIBUTION CHAMBER	2.00 x 2.00 x 1.40
VI	EQUALIZATION TANK	14.50φ x 4.50
VII	MBBR TANK	9.00φ x 4.50
VIII	SECONDARY CLARIFIER	14.00φ x 4.00
IX	FILTER FEED TANK	7.00 x 5.00 x 3.50
X	PRESSURE SAND FILTER	3.00 x 2.50
XI	ACTIVATED CARBON FILTER	3.00 x 2.50
XII	TREATED WATER TANK	7.00 x 5.00 x 3.50
XIII	TREATED WATER TANK CHANNEL (OU)	0.50 x 1.00
XIV	SLUDGE SUMP	3.75 x 2.50
XV	SLUDGE THICKENER	6.20 x 3.50
XVI	CENTRIFUGE SHED	10.00 x 7.00 x 8.00
XVII	SLUDGE STORAGE YARD	6.00 x 6.00 x 4.50
XVIII	TRANSFORMER HOUSING, CONTROL ROOM & LABORATORY BUILDING	
XIX	GENERATOR SHED	4.00 x 3.00 x 0.45
XX	PUMP HOUSE	3.00 x 3.00 x 3.00




NOTES

- WALKWAY
- EXISTING INLET PIPE TO STP ( PUMPING LINE)
- LAYOUT OF FUTURE STP
- LAYOUT OF PROPOSED STP

PROJECT TITLE


**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY KOCHI**

CONSULTANT

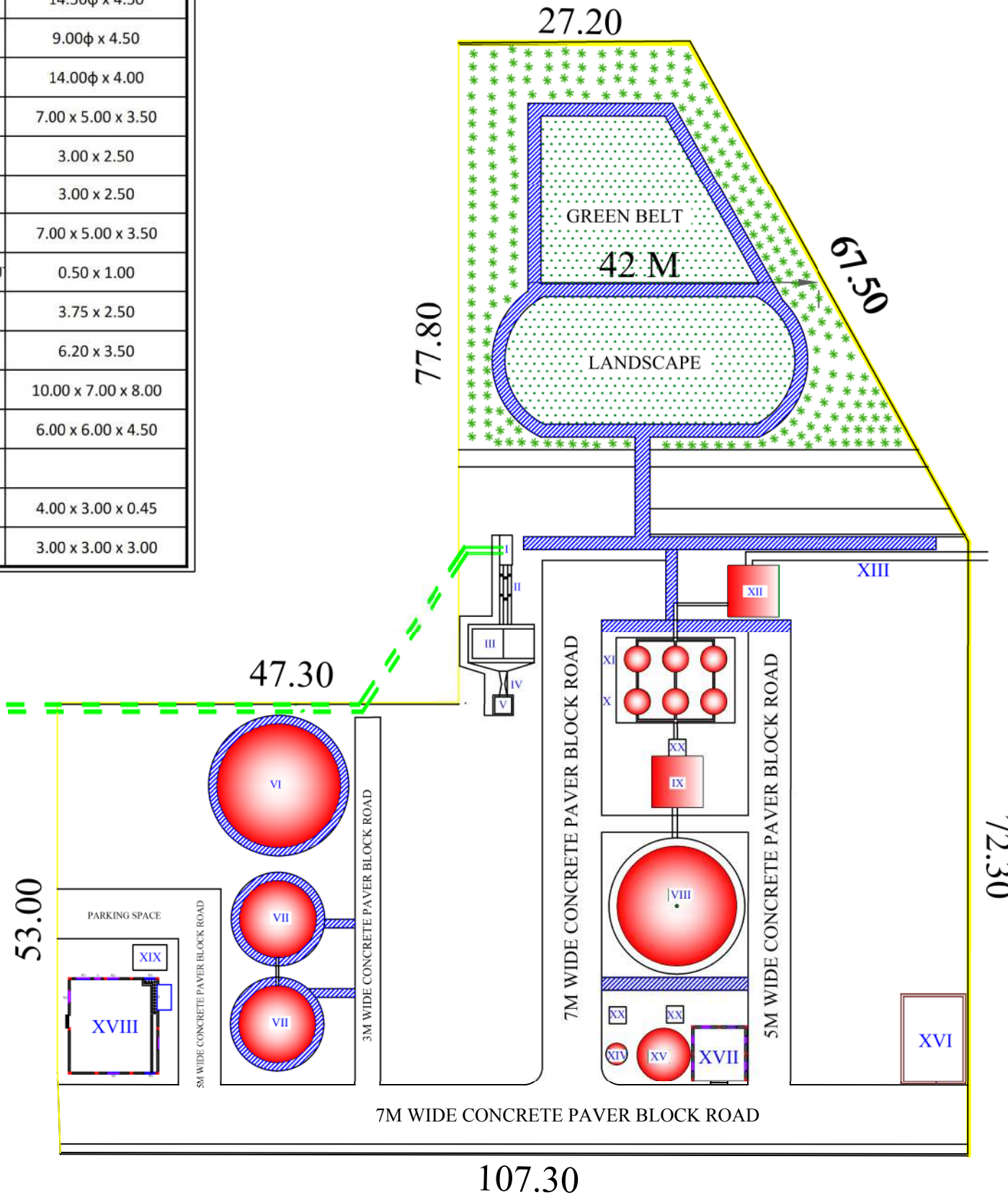


**RAM BIOLOGICALS CALICUT**




DRAWING TITLE	Rev <b>00</b>
GENERAL ARRANGEMENT OF PROPOSED STP WITH FUTURE CONSIDERATION	
DRAWING NO	
<b>RAM-KWA-STP-C-003</b>	

Drawn By	VYSHAK P.T	Sheet No	01
Checked By	SOORAJ M	Sheet Size	A-3
Date	05-01-2018	Scale	NTS

SL NO	UNIT	SIZE
I	RECEIVING CHAMBER	4.00 x 1.50 x 2.50
II	SCREEN CHANNEL	7.00 x 0.45 x 1.00
III	GRIT CHAMBER	3.65 x 3.65 x 1.40
IV	PARSHALL FLUME	0.83 x 0.38 x 3.00 x 1.40
V	DISTRIBUTION CHAMBER	2.00 x 2.00 x 1.40
VI	EQUALIZATION TANK	14.50φ x 4.50
VII	MBBR TANK	9.00φ x 4.50
VIII	SECONDARY CLARIFIER	14.00φ x 4.00
IX	FILTER FEED TANK	7.00 x 5.00 x 3.50
X	PRESSURE SAND FILTER	3.00 x 2.50
XI	ACTIVATED CARBON FILTER	3.00 x 2.50
XII	TREATED WATER TANK	7.00 x 5.00 x 3.50
XIII	TREATED WATER TANK CHANNEL (OU	0.50 x 1.00
XIV	SLUDGE SUMP	3.75 x 2.50
XV	SLUDGE THICKENER	6.20 x 3.50
XVI	CENTRIFUGE SHED	10.00 x 7.00 x 8.00
XVII	SLUDGE STORAGE YARD	6.00 x 6.00 x 4.50
XVIII	TRANSFORMER HOUSING, CONTROL ROOM & LABORATORY BUILDING	
XIX	GENERATOR SHED	4.00 x 3.00 x 0.45
XX	PUMP HOUSE	3.00 x 3.00 x 3.00




NOTES

-  WALKWAY
-  EXISTING INLET PIPE TO STP ( PUMPING LINE)
-  LAYOUT OF PROPOSED STP

PROJECT TITLE


**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY KOCHI**

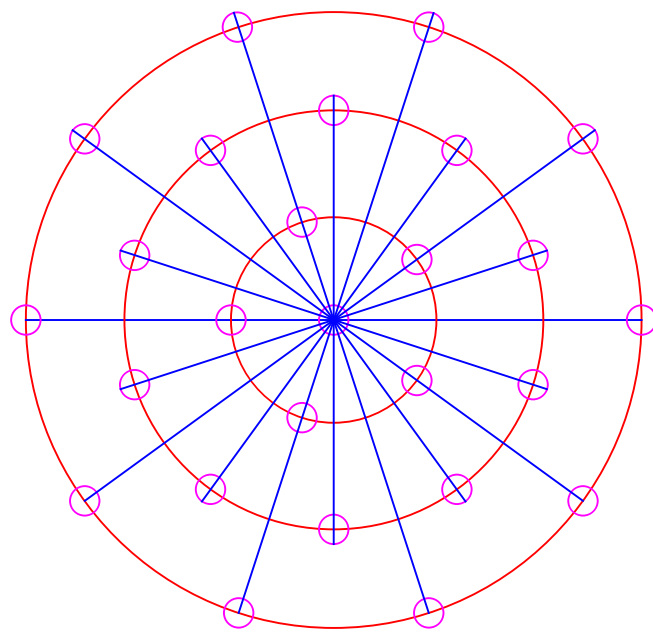
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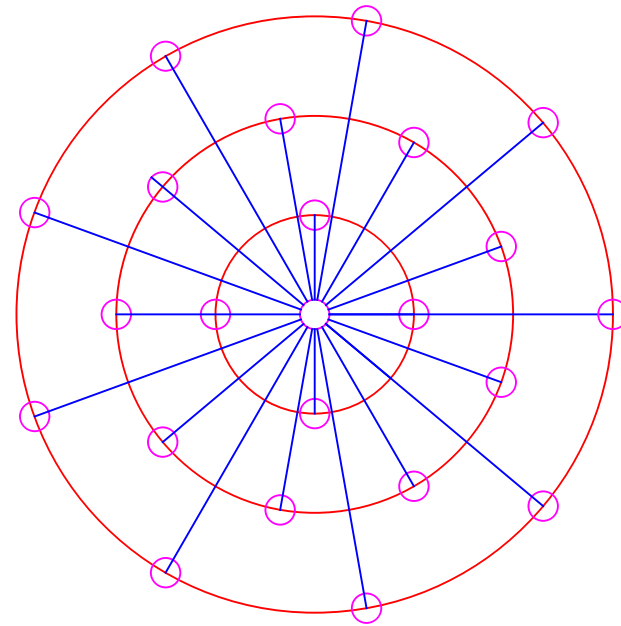
**RAM BIOLOGICALS CALICUT**

DRAWING TITLE	Rev <b>00</b>
GENERAL ARRANGEMENT OF PROPOSED STP WITHOUT FUTURE CONSIDERATION	
DRAWING NO	
<b>RAM-KWA-STP-C-004</b>	

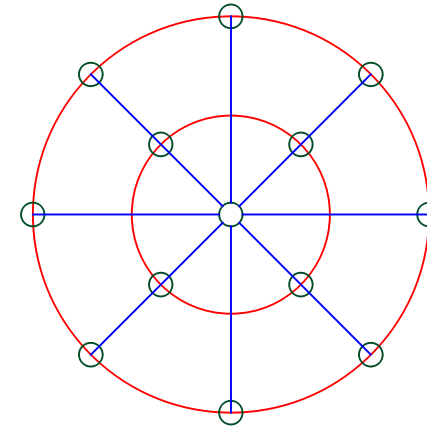
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Date	05-01-2018	Scale	NTS



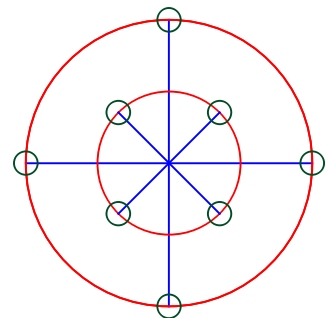
EQUALIZATION TANK



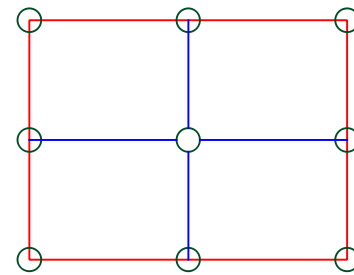
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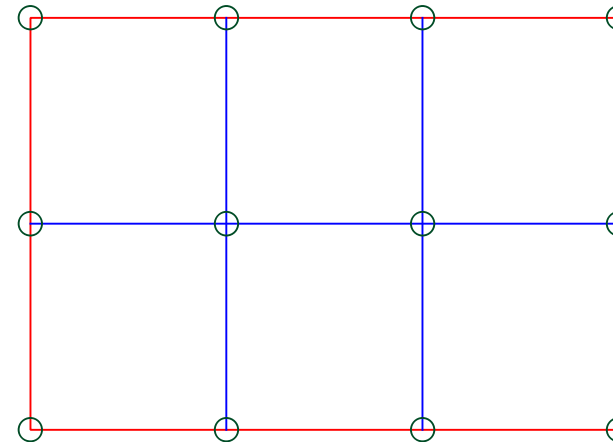
MBBR TANK



SLUDGE THICKENER



TREATED WATER TANK



FILTER FOUNDATIONS

NOTES

01. ALL DIMENSIONS ARE IN METERS UNLESS IT IS SPECIALLY MENTIONED
02. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
03. PILE LAYOUT IS DESIGNED BASED ON THE GEOTECH INVESTIGATION REPORT GIVEN BY THE CLIENT
04. CONTRACTOR SHALL DO THE DETAILED SOIL PROFILE ANALYSIS BEFORE COMMENCEMENT OF WORK
05. PILE CAP THICKNESS FOR 750mm PILES SHALL BE MINIMUM OF 1MTR & FOR 600mm PILES SHALL BE 75cm

○ 750mm Dia Pile      ○ 600mm Dia Pile

**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**GENERAL ARRANGEMENT OF PILE LAYOUT**

Rev

**00**

DRAWING NO

**RAM-KWA-STP-C-005**

Drawn By

**VYSHAK P.T**

Sheet No

**01**

Checked By

**SOORAJ M**

Sheet Size

**A-3**

Date

**05-01-2018**

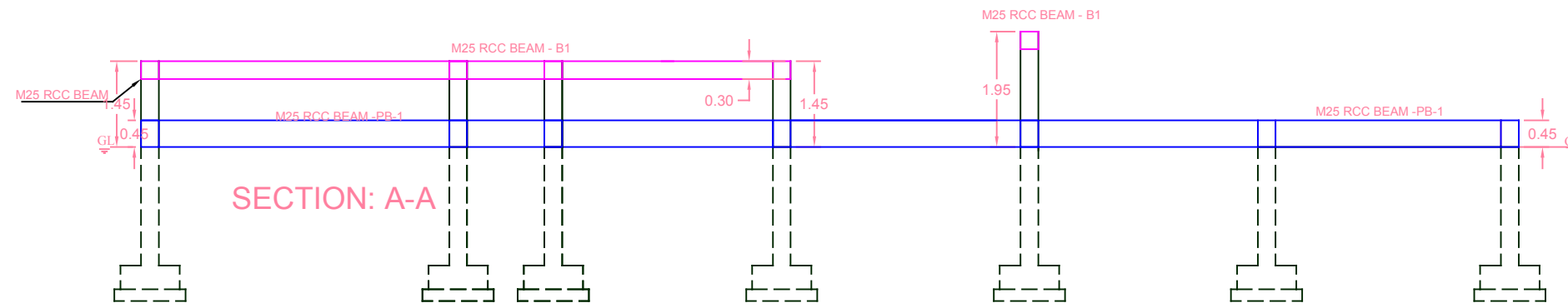
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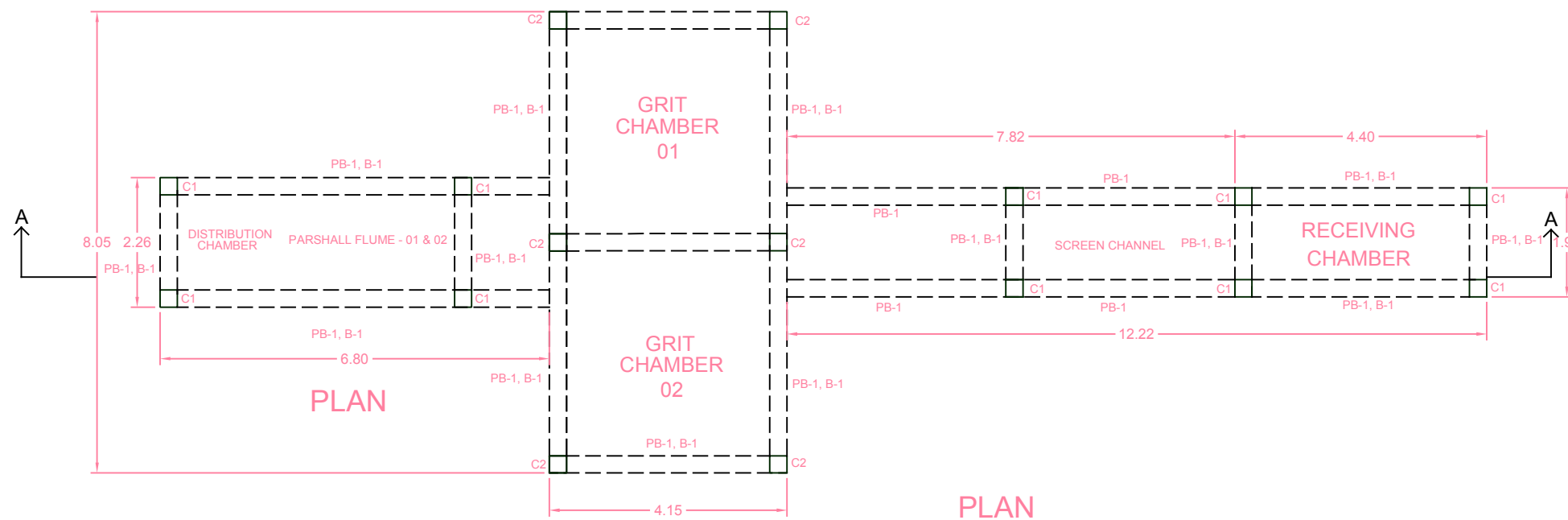
Description	Nos	Size	Effluent Load (T)	Structural Load (T)	Total Load Acting (T)	Factored Load	Safe load of 750mm Pile (T)	Safe load of 600mm Pile (T)	No of 750mm Piles needed	No of 600mm Piles needed	No of Piles Provided (750mm)	No of Piles Provided (600mm)	Length of Pile (m)
Equalization Tank	1	14.5φ x 4.5	817	670	1486	2230	85	65	27	35	27		56
MBBR Tank	2	9.0φ x 4.5	315	212	527	790	85	65	10	13	-	13	56
Secondary Clarifier	1	14.0φ x 4.0	677	546	1223	1835	85	65	23	29	23		56
Sludge Thickener	1	6.2φ x 3.5	116	110	226	340	85	65	4	6	-	8	56
Filter Feed Tank	1	7 x 5 x 3.5	135	156	290	435	85	65	6	7	-	9	56
Treated Water Tank	1	7 x 5 x 3.5	135	156	290	435	85	65	6	7	-	9	56
Filter Foundations	1	15 x 10.5	117	307	424	636	85	65	8	10	-	12	56
<b>Total</b>											<b>50</b>	<b>51</b>	

PROJECT TITLE

# CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI

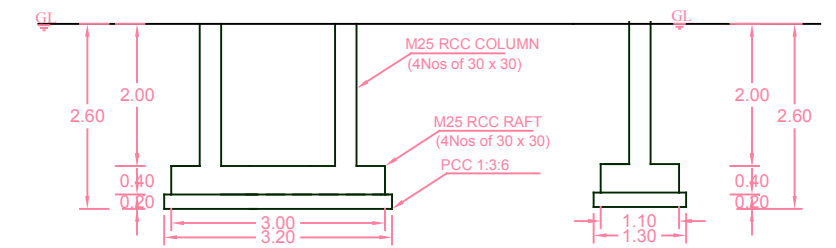


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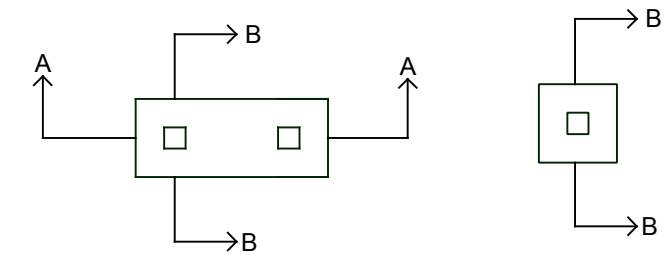
PLAN

LEGENDS				
Mark	Description	Footing	Size	Nos
C-1	Column	Strip Footing	0.30 x 0.30	10
C-2	Column	Isolated Footing	0.30 x 0.30	6
PB-1	Plinth Beam		0.30 x 0.45	
B-1	Beam		0.30 x 0.30	



SECTION: A-A

SECTION: B-B



COLUMN LAYOUT - C1

COLUMN LAYOUT - C2

PLAN

NOTES

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE  
COLUMNS & BEAMS LAYOUT - TYPICAL FOR RECEIVING  
CHAMBER, SCREEN CHANNEL, GRIT CHAMBER &  
PARSHALL FLUME

DRAWING NO  
**RAM-KWA-STP-C-006**

Rev

**00**

Drawn By  
**VYSHAK P.T**

Sheet No  
**02**

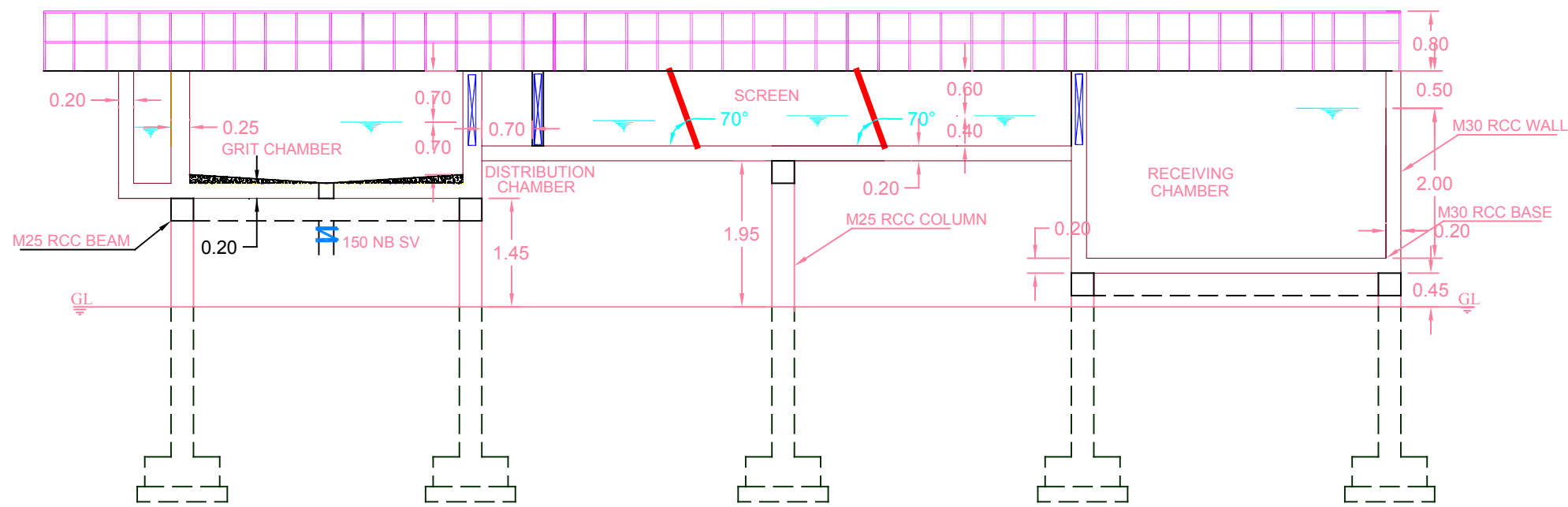
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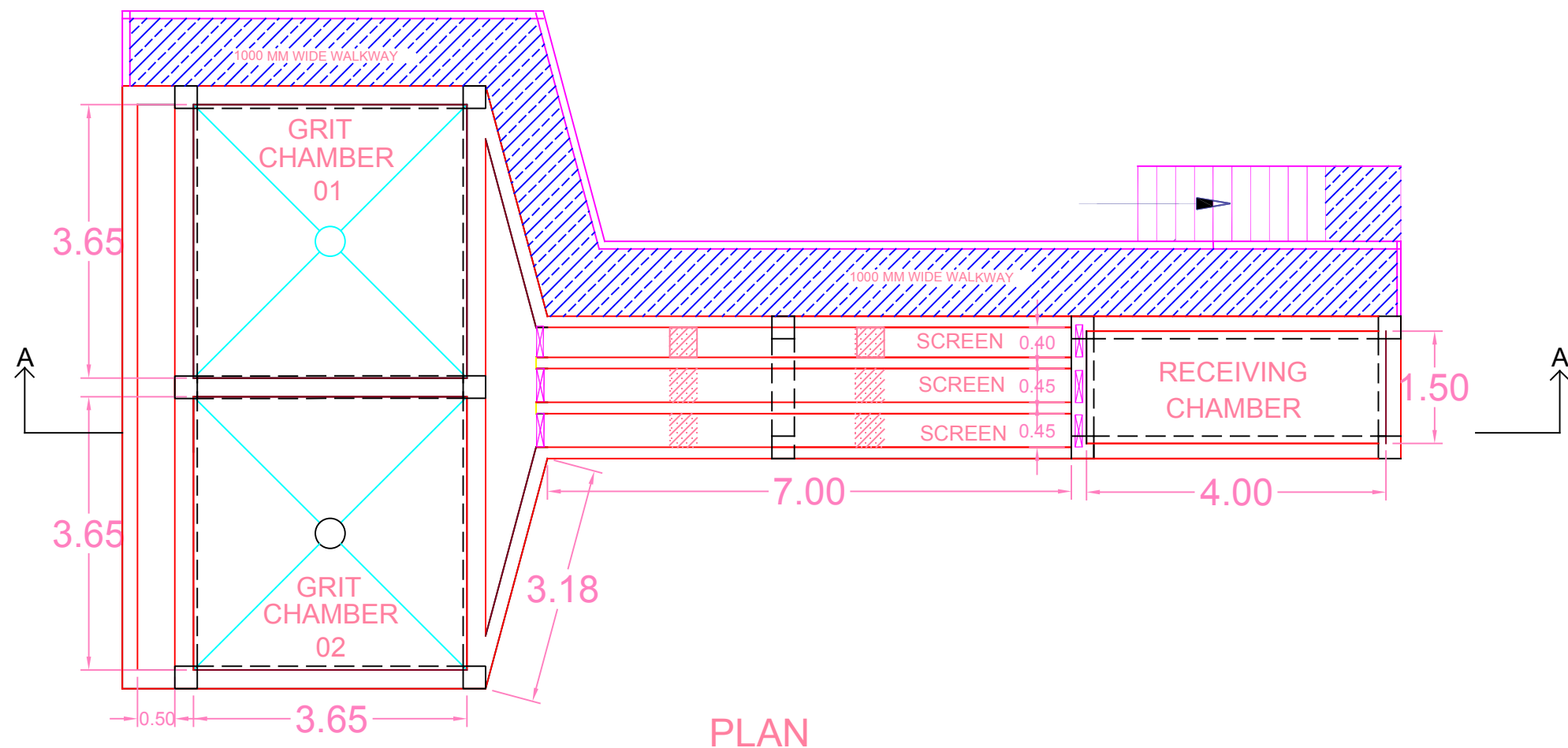
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**05-01-2018**

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**NTS**





SECTION: A-A



PLAN

NOTES

01. ALL DIMENSIONS ARE IN METERS UNLESS IT IS SPECIALLY MENTIONED
02. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
03. THICKNESS OF PCC SHALL BE TAKEN AS 10CM IF NOT MENTIONED OTHERWISE
04. ALL BEAMS ARE OF SIZE 30 x 30 (cm)
05. COLUMN & BEAM DESIGNS SHALL BE AS PER THE DETAILED LAYOUT
06. DASHED LINES ARE SUPPORTS BELOW THE BASE SLAB. REFER DETAILED DRAWING FOR THE SAME

**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**GENERAL ARRANGEMENT OF RECEIVING CHAMBER, SCREEN CHANNEL & GRIT CHAMBER**

DRAWING NO

**RAM-KWA-STP-C-006**

Rev

**00**

Drawn By

**VYSHAK P.T**

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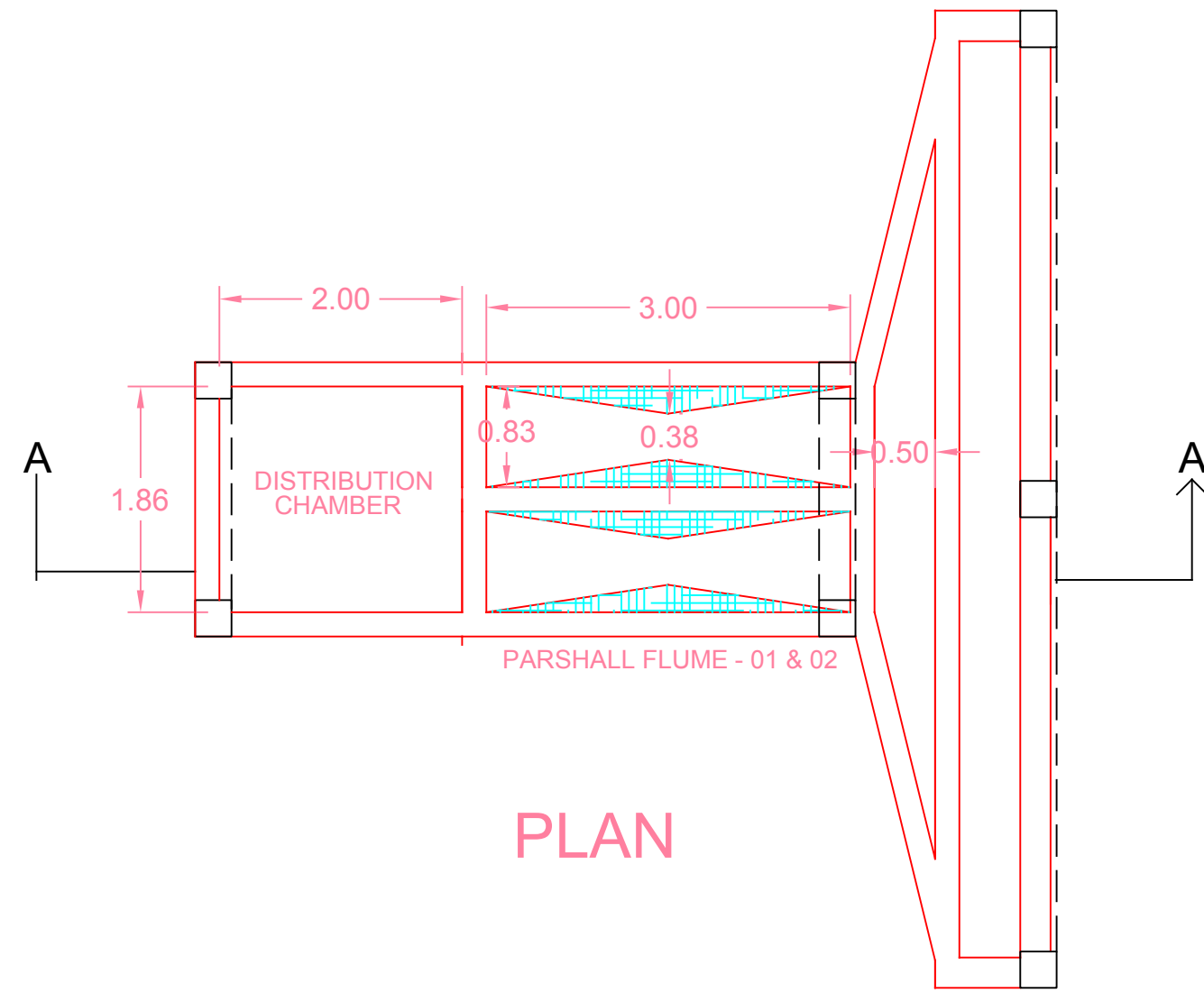
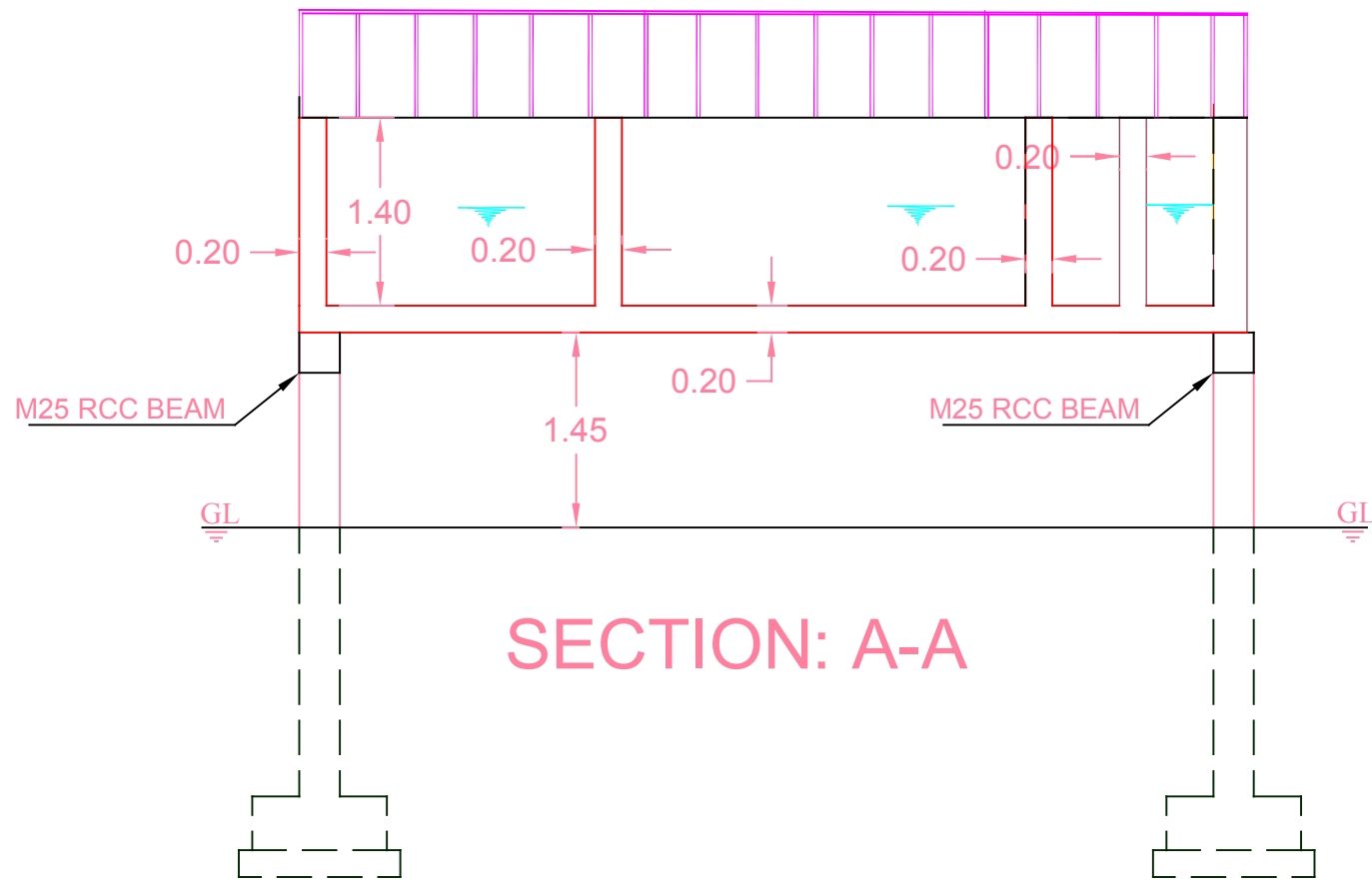
**A-3**

Date

**05-01-2018**

Scale

**NTS**



**NOTES**

01. ALL DIMENSIONS ARE IN METERS UNLESS IT IS SPECIALLY MENTIONED
02. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
03. THICKNESS OF PCC SHALL BE TAKEN AS 10CM IF NOT MENTIONED OTHERWISE
04. ALL BEAMS ARE OF SIZE 30 x 30 (cm)
05. COLUMN & BEAM DESIGNS SHALL BE AS PER THE DETAILED LAYOUT
06. DASHED LINES ARE SUPPORTS BELOW THE BASE SLAB. REFER DETAILED DRAWING FOR THE SAME

**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**GENERAL ARRANGEMENT OF PARSHALL FLUME & DISTRIBUTION CHAMBER**

Rev

**00**

DRAWING NO

**RAM-KWA-STP-C-007**

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**VYSHAK P.T**

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**01**

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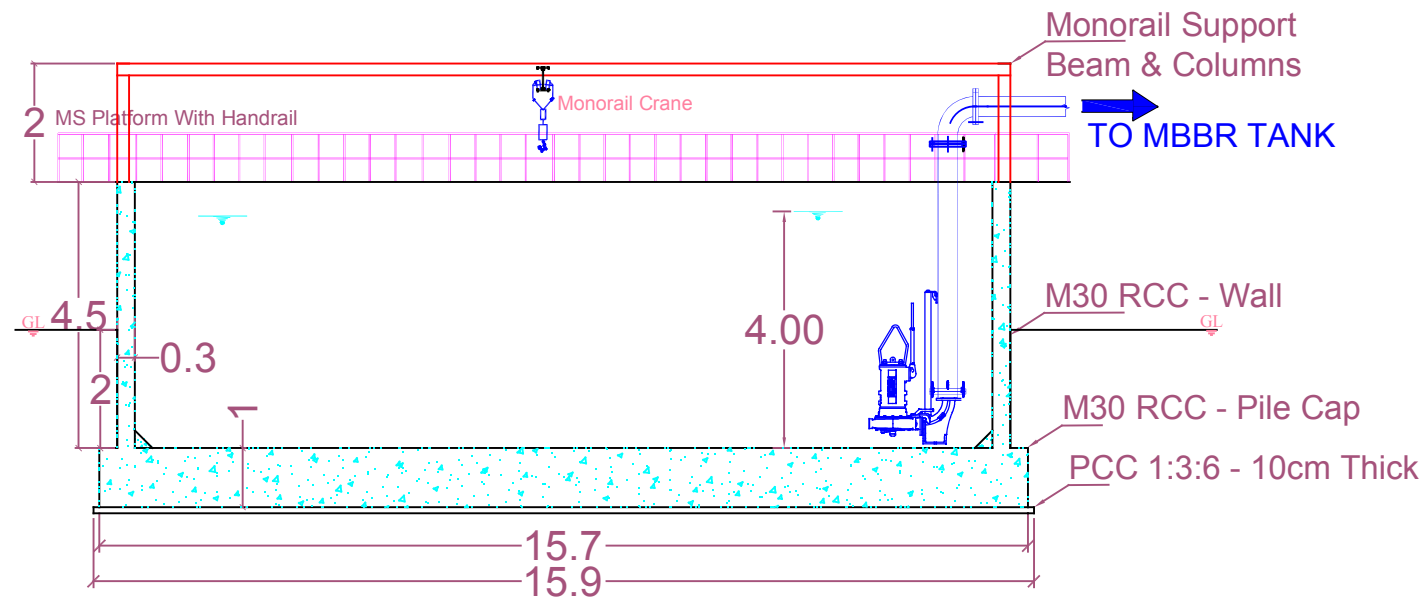
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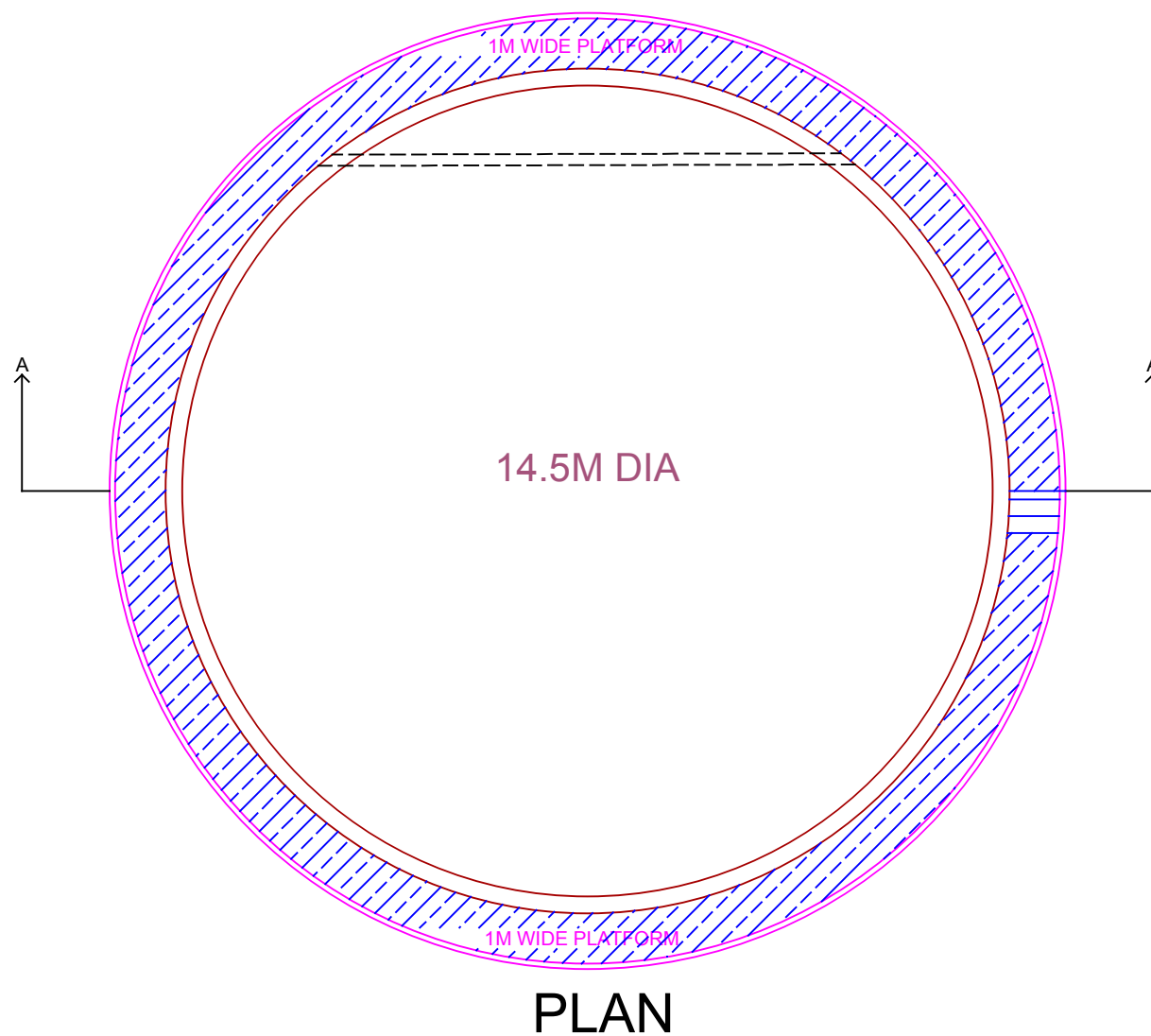
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**NTS**

# EQUALIZATION TANK



SECTION AA



PLAN

## NOTES

01. ALL DIMENSIONS ARE IN METERS UNLESS IT IS SPECIALLY MENTIONED
02. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
03. THICKNESS OF PCC SHALL BE TAKEN AS 10CM IF NOT MENTIONED OTHERWISE

**FOR ESTIMATION PURPOSE ONLY**

## PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

## CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

## CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

## DRAWING TITLE

**GENERAL ARRANGEMENT OF  
EQUALIZATION TANK**

## Rev

**00**

## DRAWING NO

**RAM-KWA-STP-C-008**

## Drawn By

**VYSHAK P.T**

## Sheet No

**01**

## Checked By

**SOORAJ M**

## Sheet Size

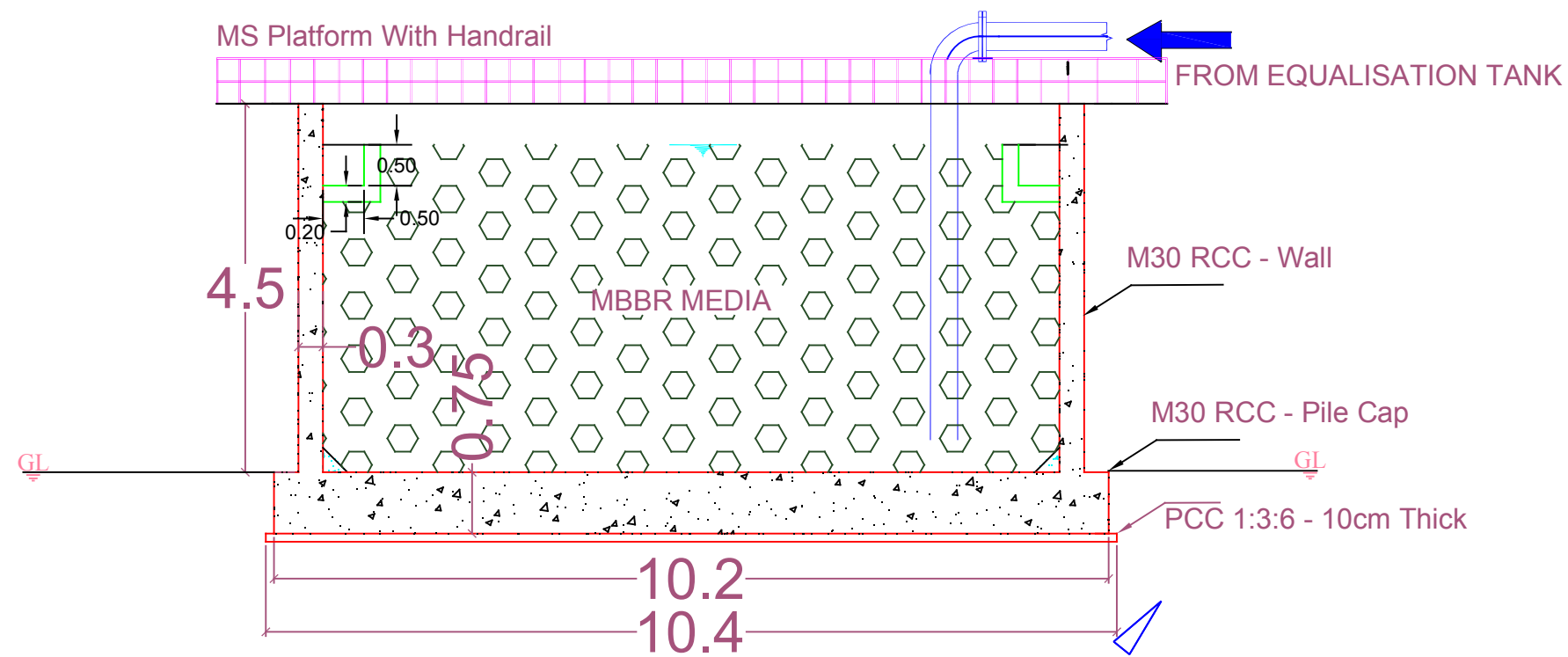
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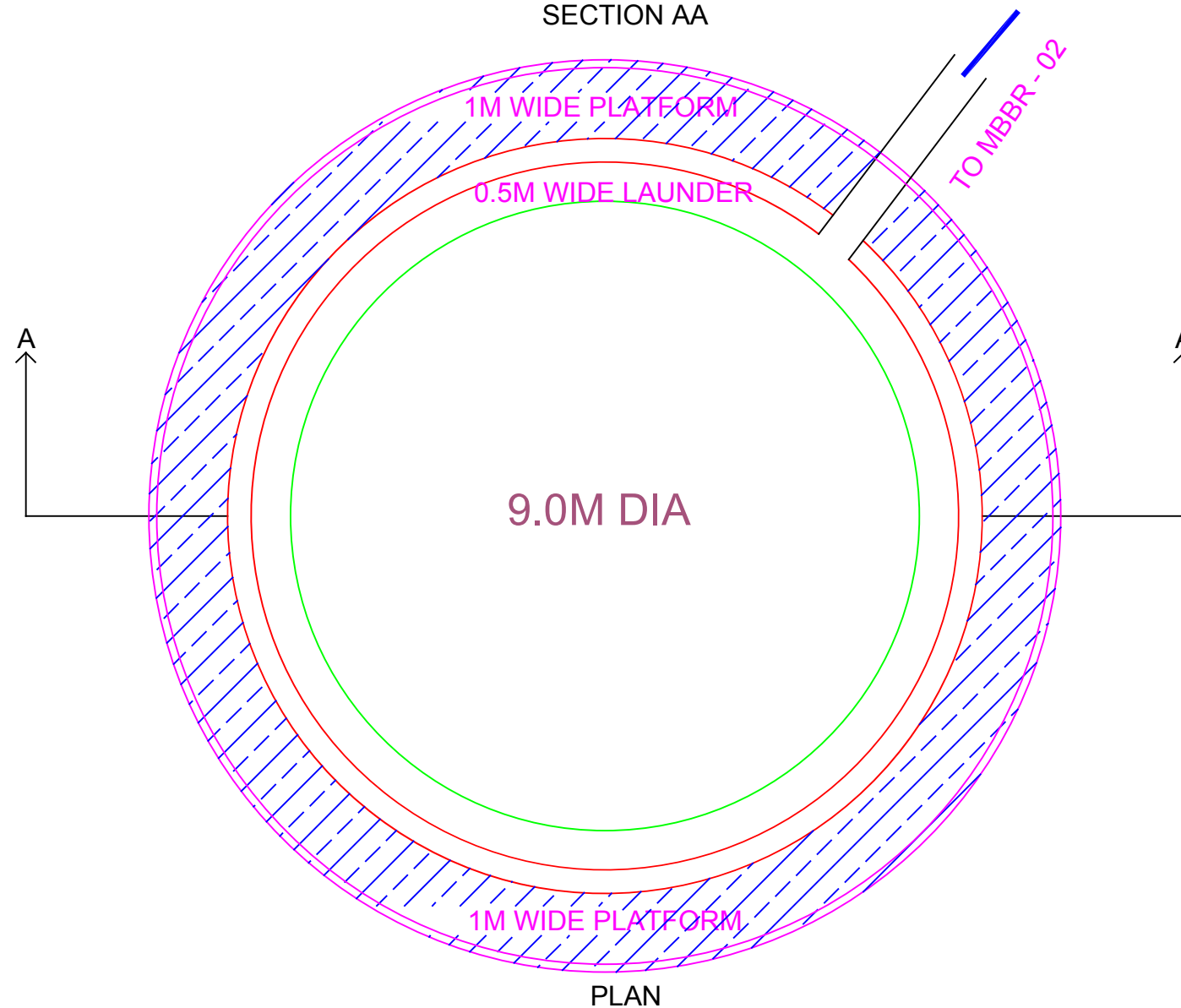
**05-01-2018**

## Scale

**NTS**



SECTION AA



PLAN

NOTES

01. ALL DIMENSIONS ARE IN METERS UNLESS IT IS SPECIALLY MENTIONED
02. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
03. THICKNESS OF PCC SHALL BE TAKEN AS 10CM IF NOT MENTIONED OTHERWISE

**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**GENERAL ARRANGEMENT OF  
MBBR TANK - 01**

Rev

**00**

DRAWING NO

**RAM-KWA-STP-C-009**

Drawn By

**VYSHAK P.T**

Sheet No

**01**

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**SOORAJ M**

Sheet Size

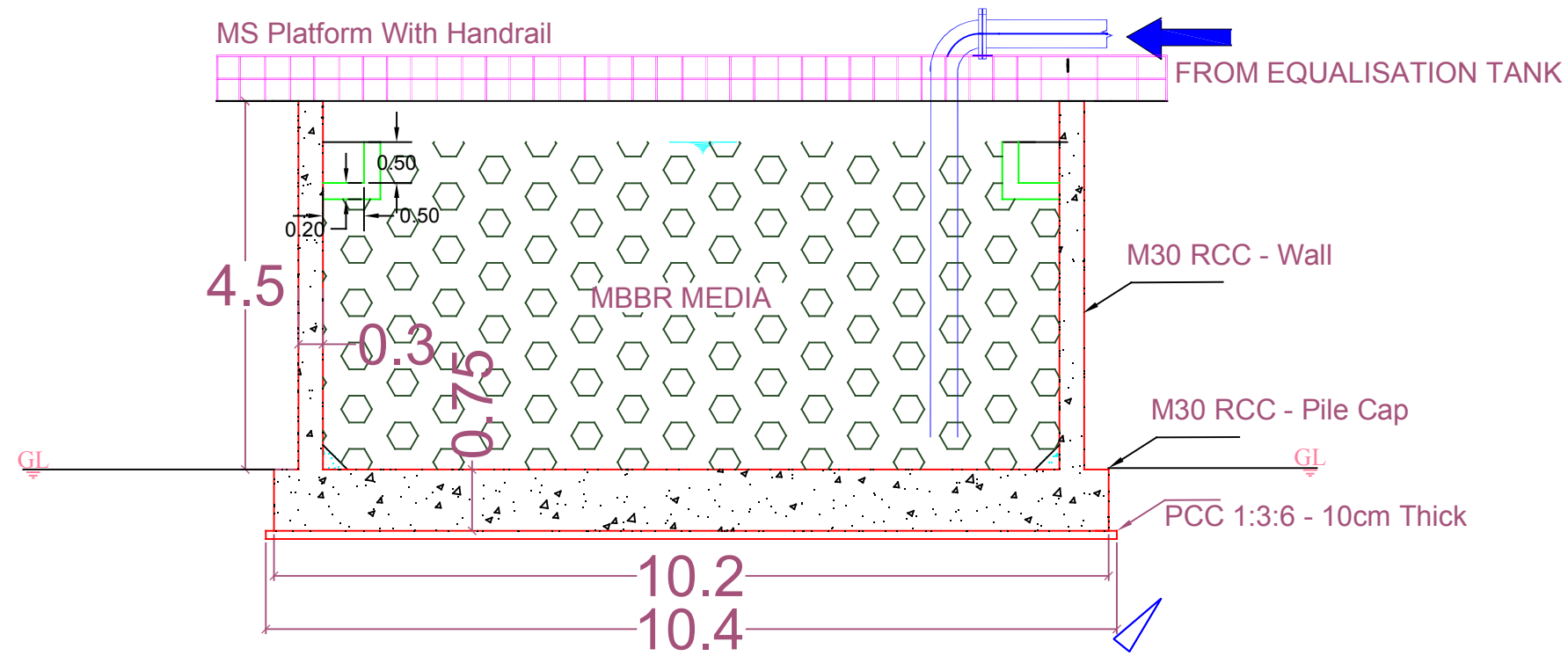
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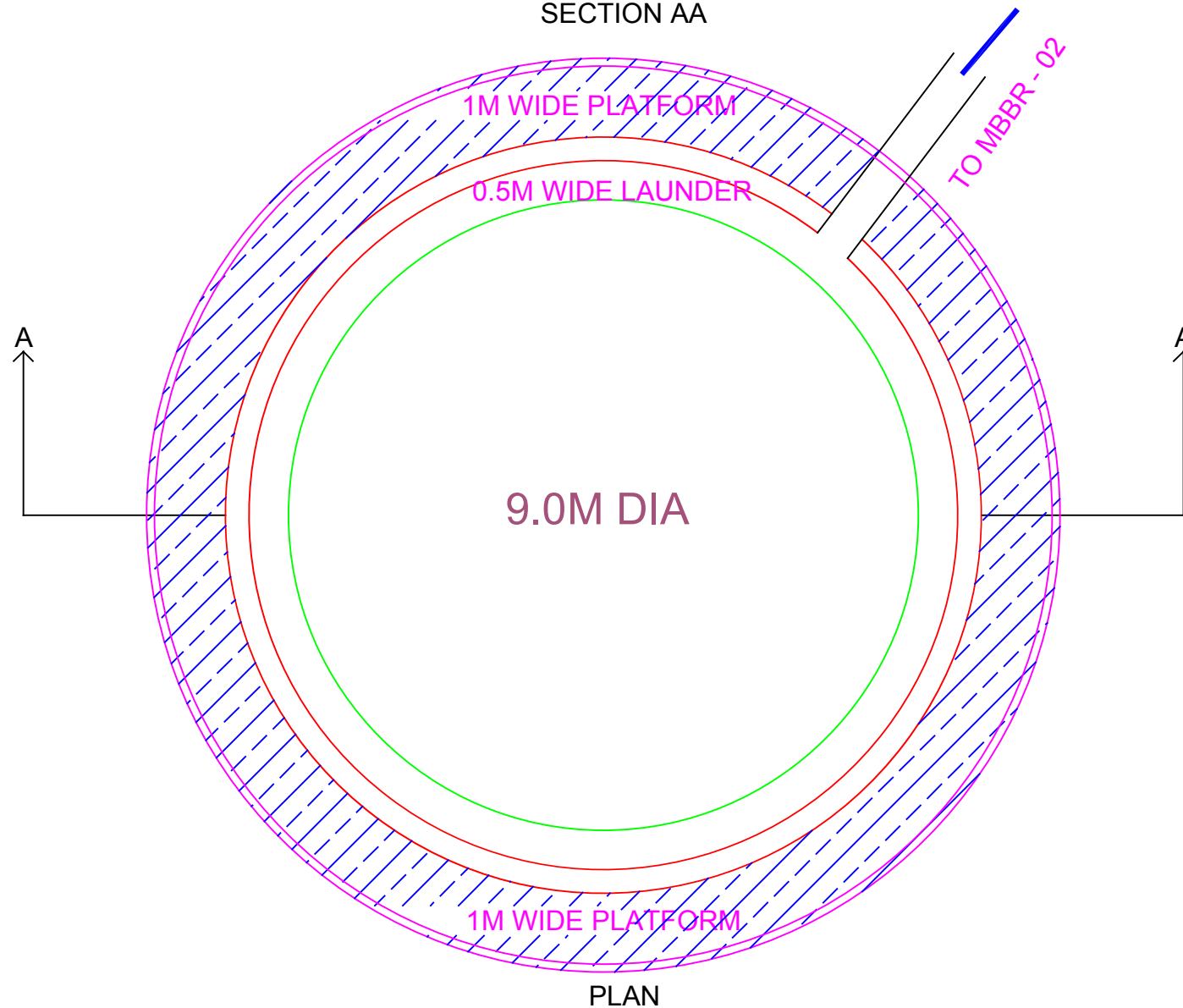
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Scale

**NTS**



SECTION AA



PLAN

NOTES

01. ALL DIMENSIONS ARE IN METERS UNLESS IT IS SPECIALLY MENTIONED
02. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
03. THICKNESS OF PCC SHALL BE TAKEN AS 10CM IF NOT MENTIONED OTHERWISE

**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**GENERAL ARRANGEMENT OF  
MBBR TANK - 02**

Rev

**00**

DRAWING NO

**RAM-KWA-STP-C-010**

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**VYSHAK P.T**

Sheet No

**01**

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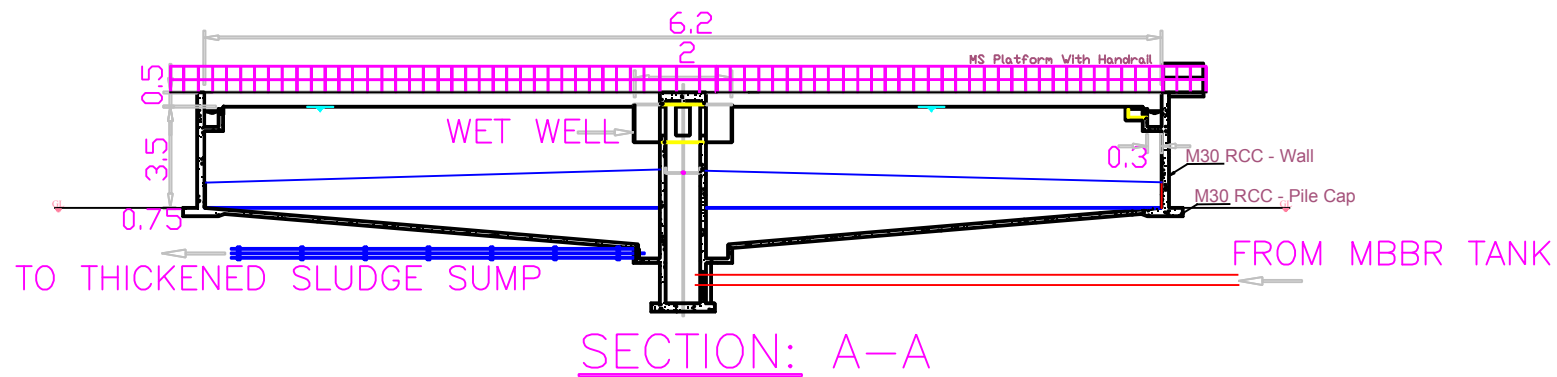
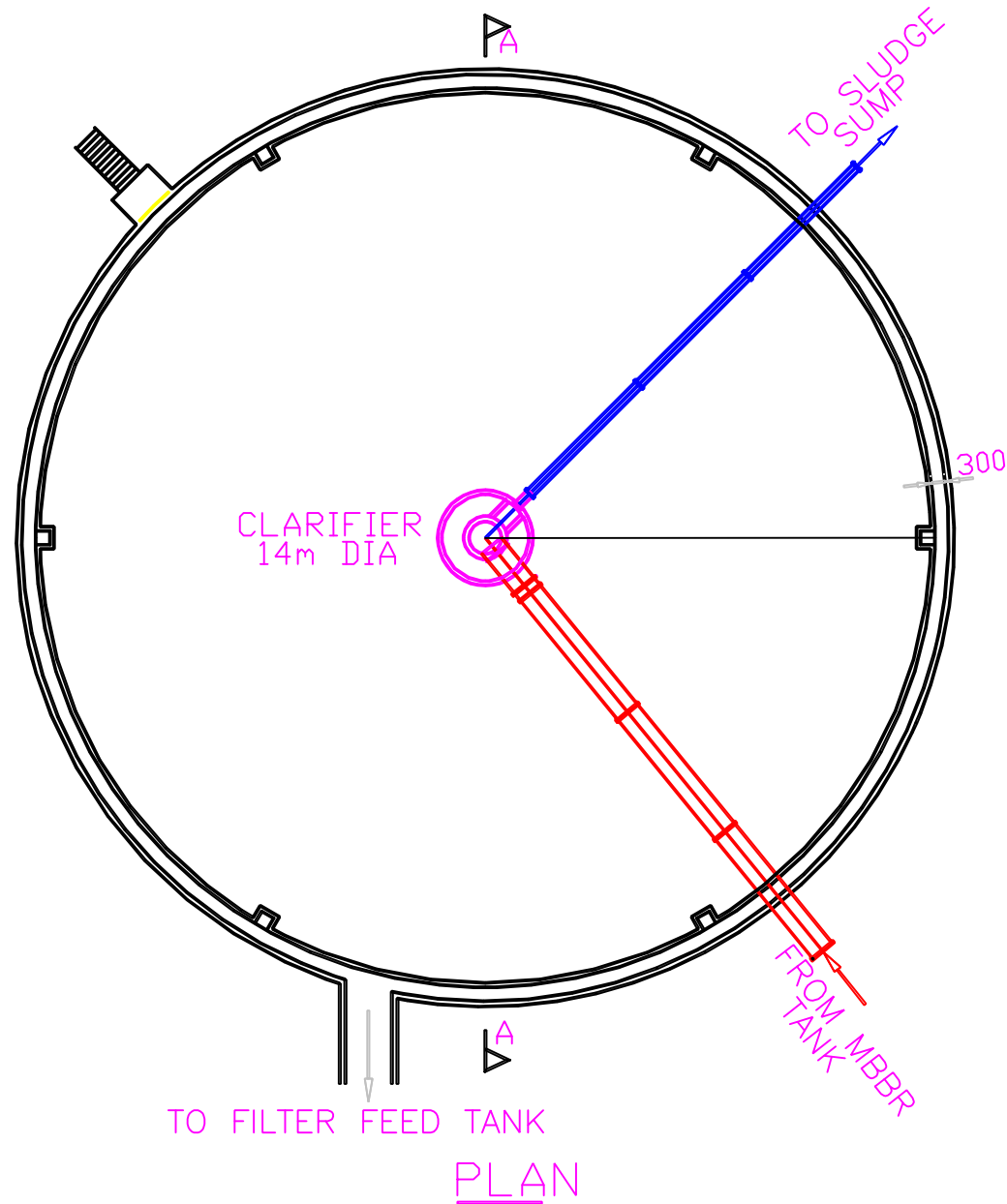
**A-3**

Date

**05-01-2018**

Scale

**NTS**



NOTES

01. ALL DIMENSIONS ARE IN METERS UNLESS IT IS SPECIALLY MENTIONED
02. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
03. THICKNESS OF PCC SHALL BE TAKEN AS 10CM IF NOT MENTIONED OTHERWISE
04. WALL THICKNESS IS 30cm & PILE CAP IS 1.0m THICK
05. PCC UNDER THE PILE CAP SHALL BE CONSIDERED

FOR ESTIMATION PURPOSE ONLY

PROJECT TITLE

CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI

CLIENT



KERALA WATER AUTHORITY  
KOCHI

CONSULTANT



RAM BIOLOGICALS  
CALICUT

DRAWING TITLE

GENERAL ARRANGEMENT OF SECONDARY CLARIFIER TANK

Rev

00

DRAWING NO

RAM-KWA-STP-C-011

Drawn By

VYSAKH T

Sheet No

01

Checked By

SOORAJ M

Sheet No

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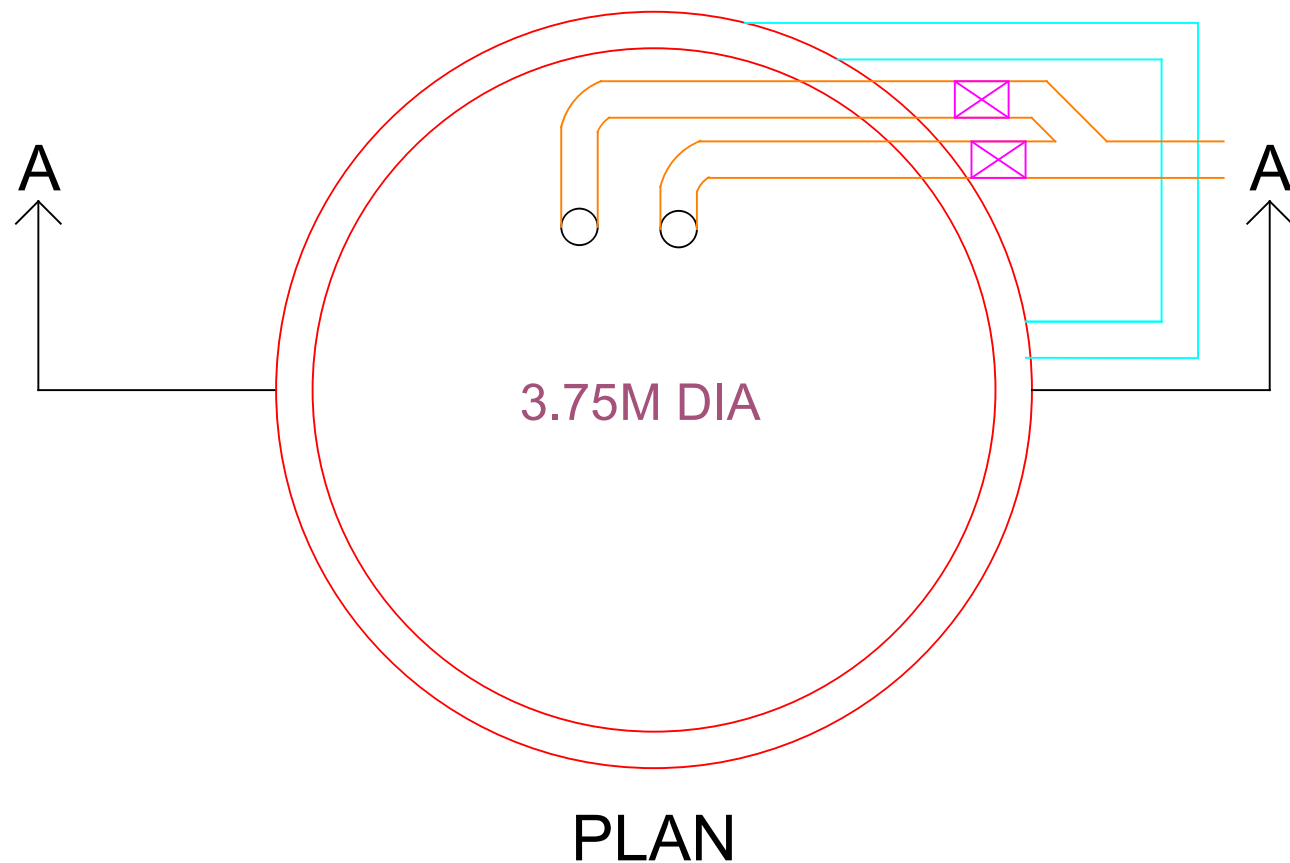
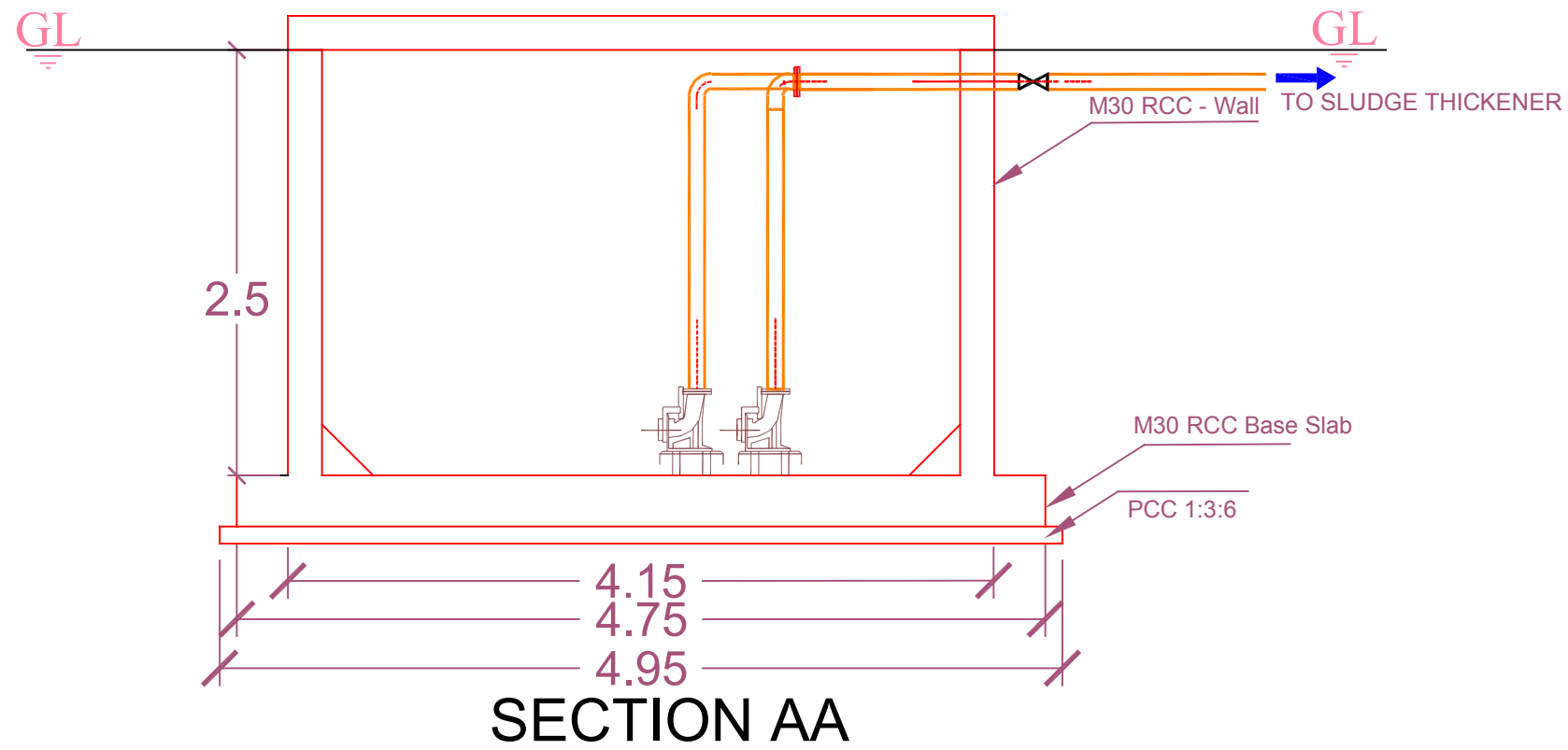
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05-01-2018

Scale

NTS

# SLUDGE SUMP



## NOTES

01. ALL DIMENSIONS ARE IN METERS UNLESS IT IS SPECIALLY MENTIONED
02. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
03. THICKNESS OF PCC SHALL BE TAKEN AS 10CM IF NOT MENTIONED OTHERWISE

**FOR ESTIMATION PURPOSE ONLY**

## PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

## CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

## CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

## DRAWING TITLE

**GENERAL ARRANGEMENT OF SLUDGE SUMP**

## DRAWING NO

**RAM-KWA-STP-C-012**

## Rev

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## Drawn By

**VYSAKH T**

## Sheet No

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## Checked By

**SOORAJ M**

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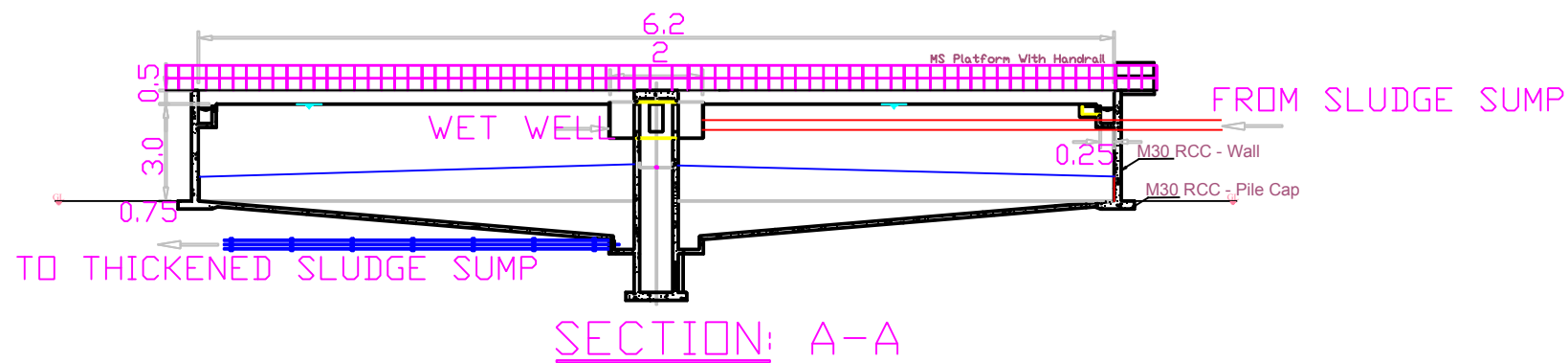
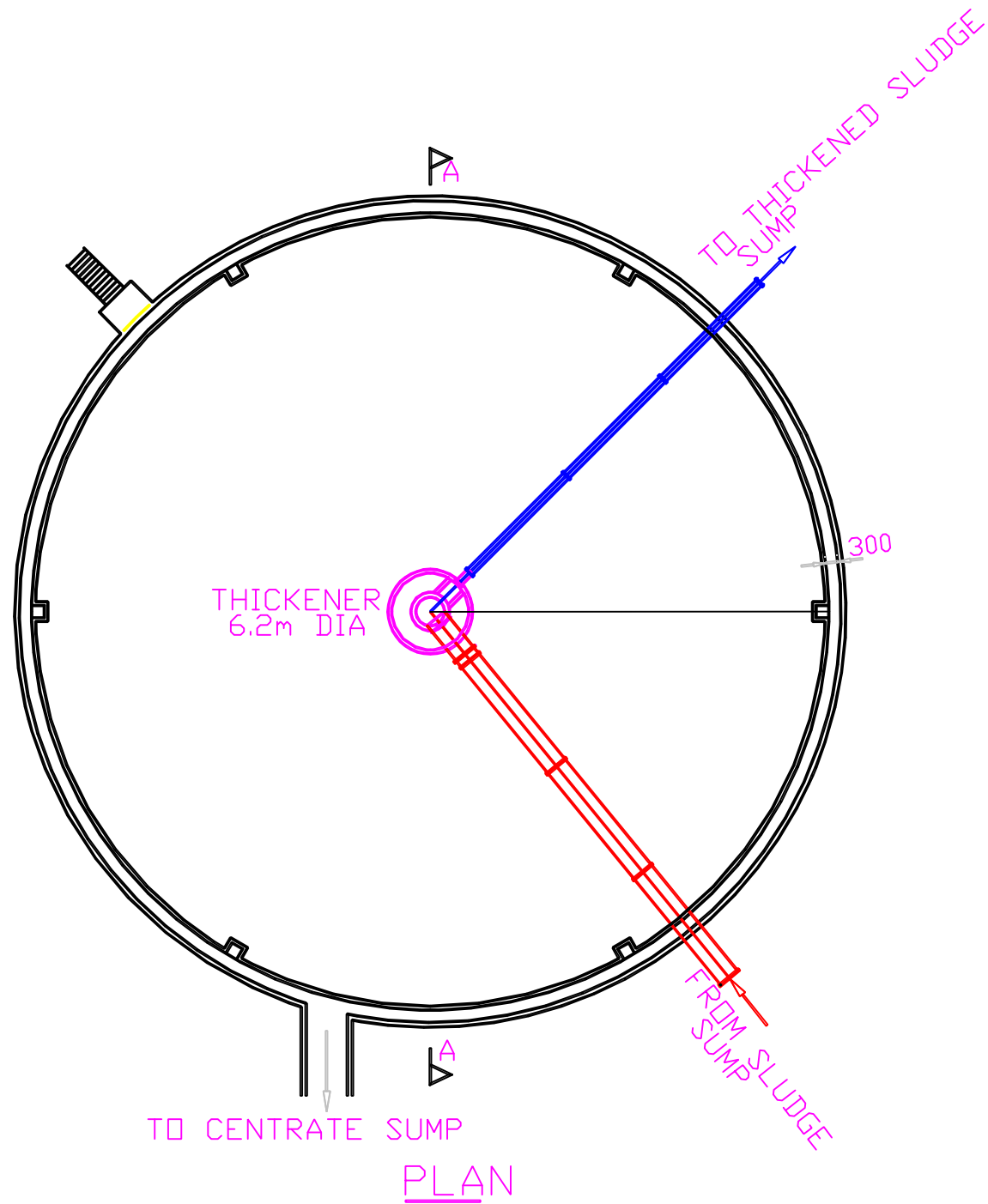
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## Date

**05-01-2018**

## Scale

**NTS**



NOTES

01. ALL DIMENSIONS ARE IN METERS UNLESS IT IS SPECIALLY MENTIONED
02. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
03. THICKNESS OF PCC SHALL BE TAKEN AS 10CM IF NOT MENTIONED OTHERWISE
04. WALL THICKNESS IS 30cm & RAFT THICKNESS IS 30cm

FOR ESTIMATION PURPOSE ONLY

PROJECT TITLE

CONSTRUCTION OF 5MLD SEWAGE  
TREATMENT PLANT AT  
ELAMKULAM, KOCHI

CLIENT



KERALA WATER AUTHORITY  
KOCHI

CONSULTANT



RAM BIOLOGICALS  
CALICUT

DRAWING TITLE

GENERAL ARRANGEMENT OF SLUDGE  
THICKENER TANK

Rev

00

DRAWING NO

RAM-KWA-STP-C-013

Drawn By

VYSAKH T

Sheet No

01

Checked By

SOORAJ M

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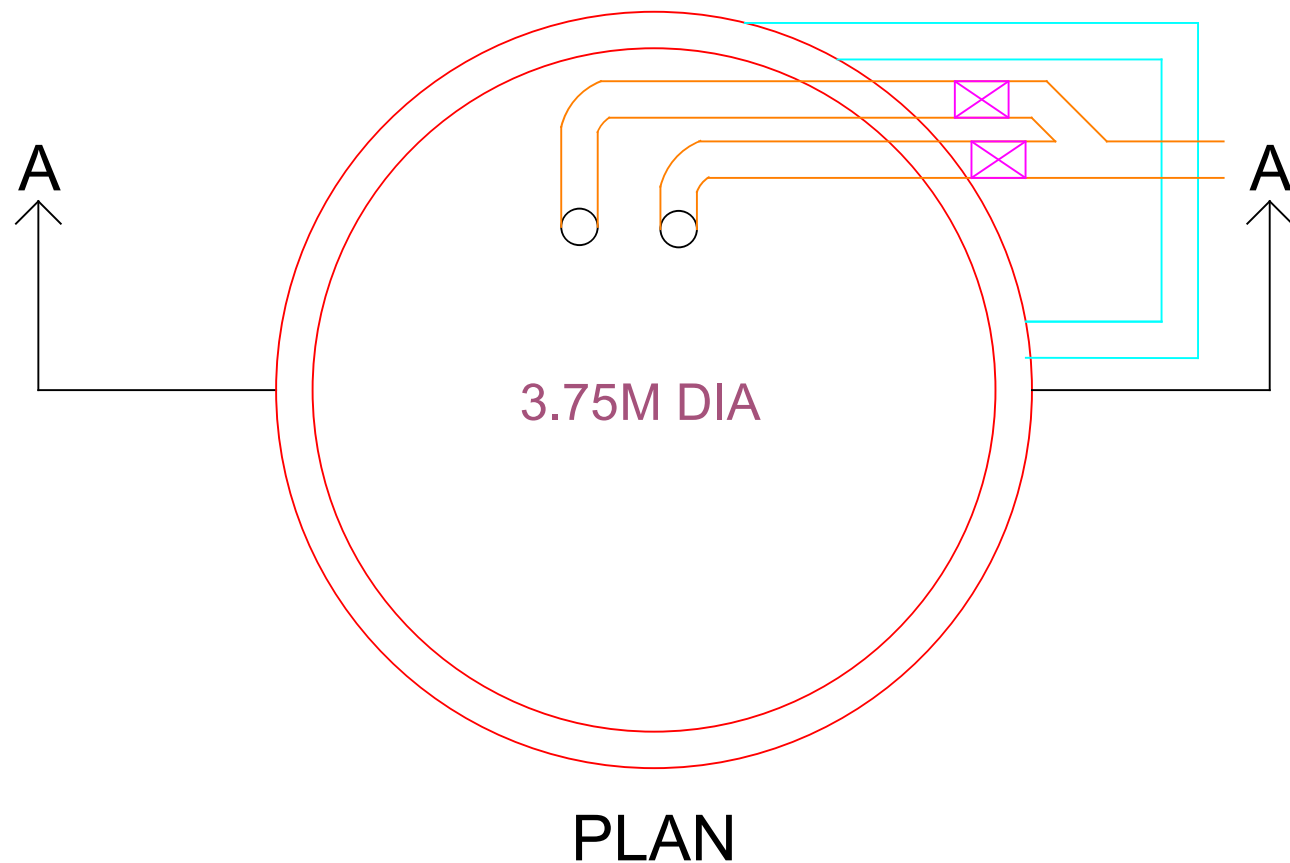
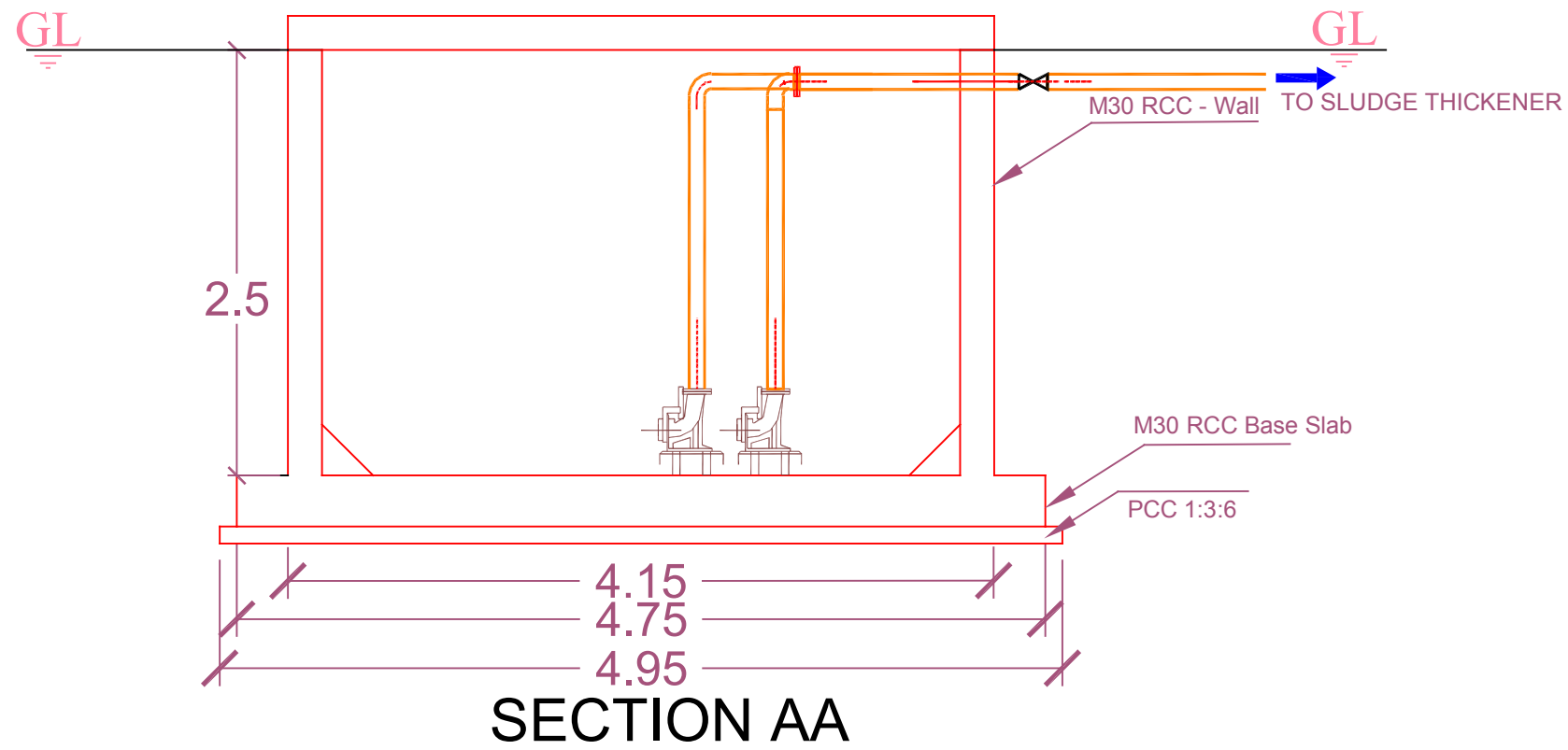
05-01-2018

Scale

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# THICKENED SLUDGE SUMP



## NOTES

01. ALL DIMENSIONS ARE IN METERS UNLESS IT IS SPECIALLY MENTIONED
02. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
03. THICKNESS OF PCC SHALL BE TAKEN AS 10CM IF NOT MENTIONED OTHERWISE

**FOR ESTIMATION PURPOSE ONLY**

## PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

## CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

## CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

## DRAWING TITLE

**GENERAL ARRANGEMENT OF THICKENED  
SLUDGE SUMP**

## DRAWING NO

**RAM-KWA-STP-C-014**

## Rev

**00**

## Drawn By

**VYSAKH T**

## Sheet No

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## Checked By

**SOORAJ M**

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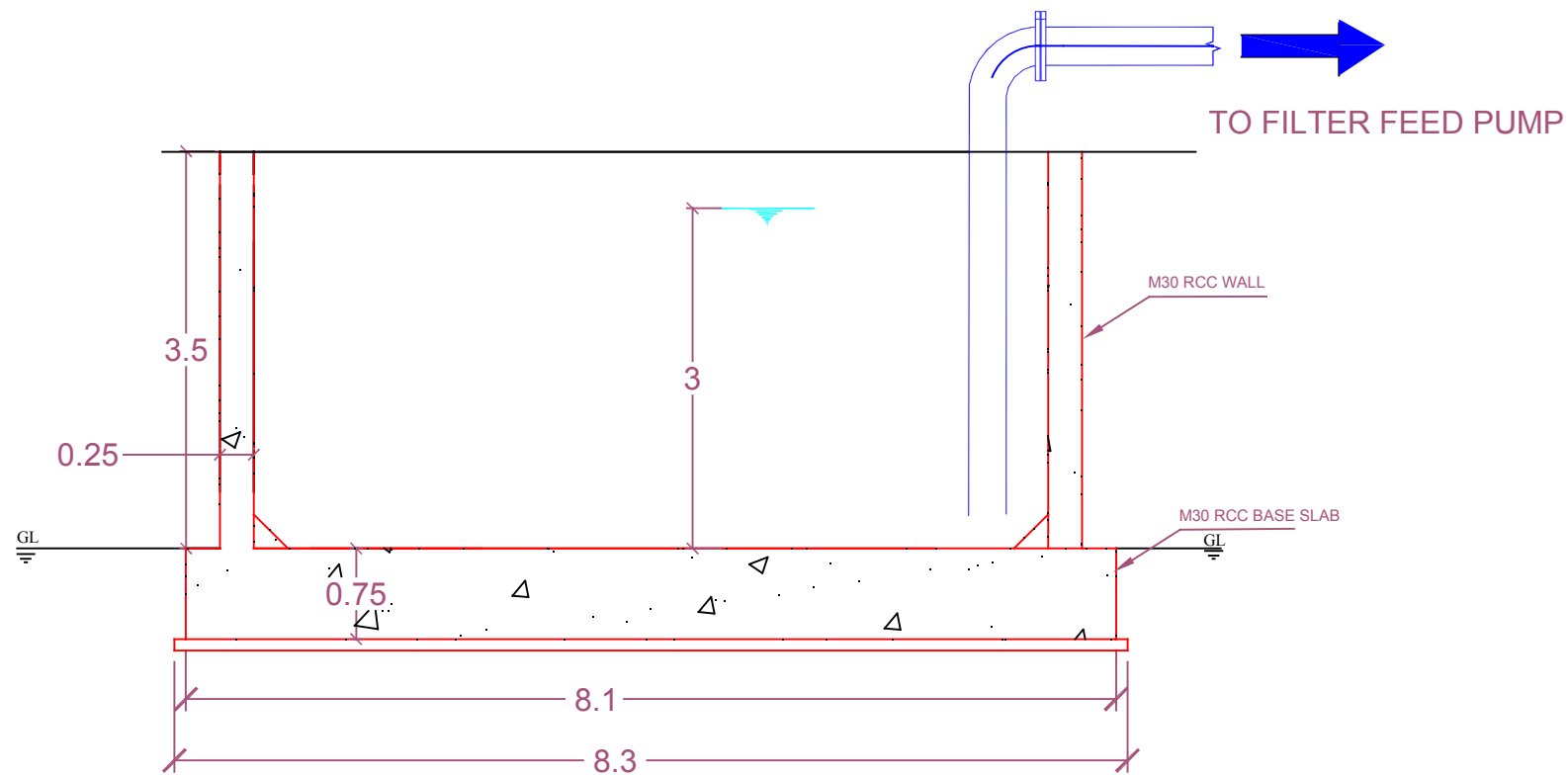
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## Date

**05-01-2018**

## Scale

**NTS**



SECTION AA



PLAN

NOTES

01. ALL DIMENSIONS ARE IN METERS UNLESS IT IS SPECIALLY MENTIONED
02. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
03. THICKNESS OF PCC SHALL BE TAKEN AS 10CM IF NOT MENTIONED OTHERWISE

**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**GENERAL ARRANGEMENT OF  
FILTER FEED TANK**

Rev

**00**

DRAWING NO

**RAM-KWA-STP-C-015**

Drawn By

**VYSHAK P.T**

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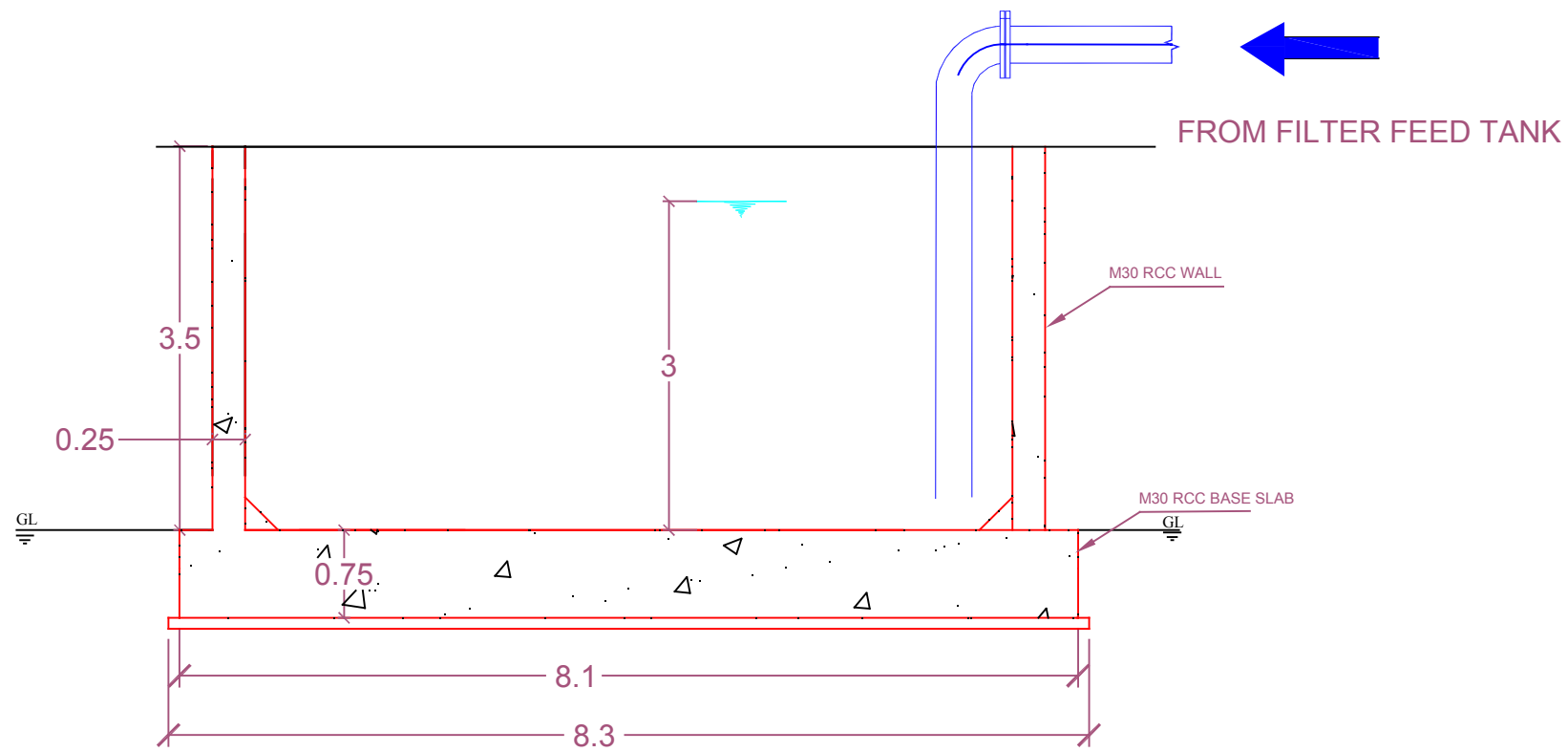
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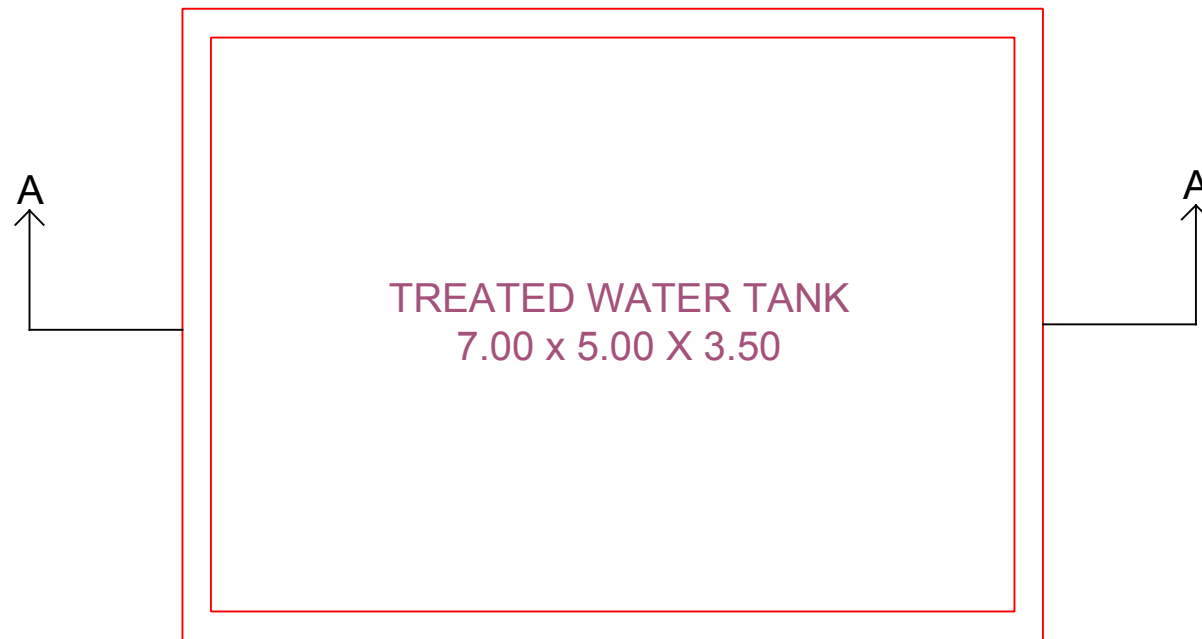
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**NTS**



SECTION AA



PLAN

NOTES

01. ALL DIMENSIONS ARE IN METERS UNLESS IT IS SPECIALLY MENTIONED
02. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
03. THICKNESS OF PCC SHALL BE TAKEN AS 10CM IF NOT MENTIONED OTHERWISE

**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**GENERAL ARRANGEMENT OF  
TREATED WATER TANK**

Rev

**00**

DRAWING NO

**RAM-KWA-STP-C-016**

Drawn By

**VYSHAK P.T**

Sheet No

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Checked By

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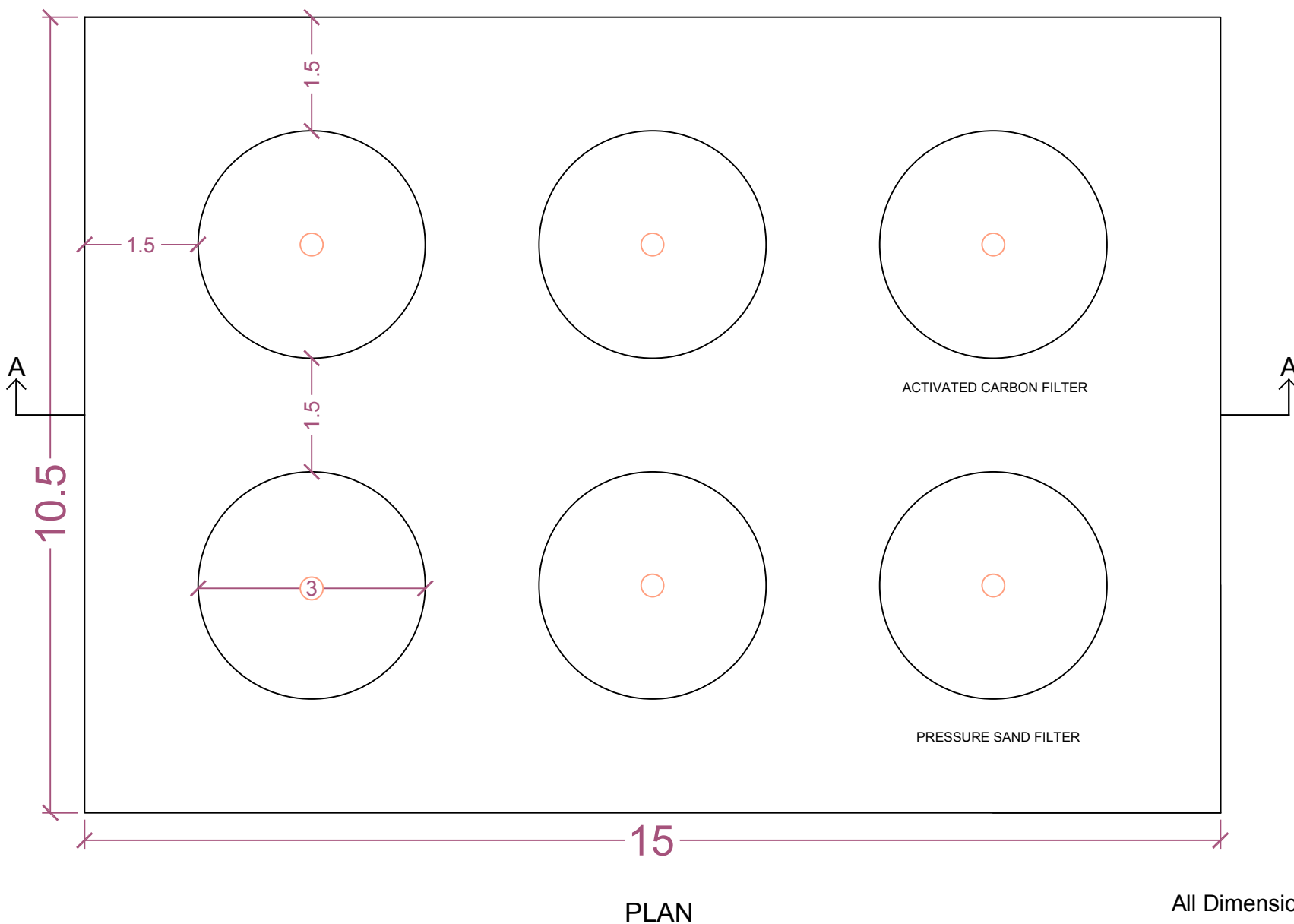
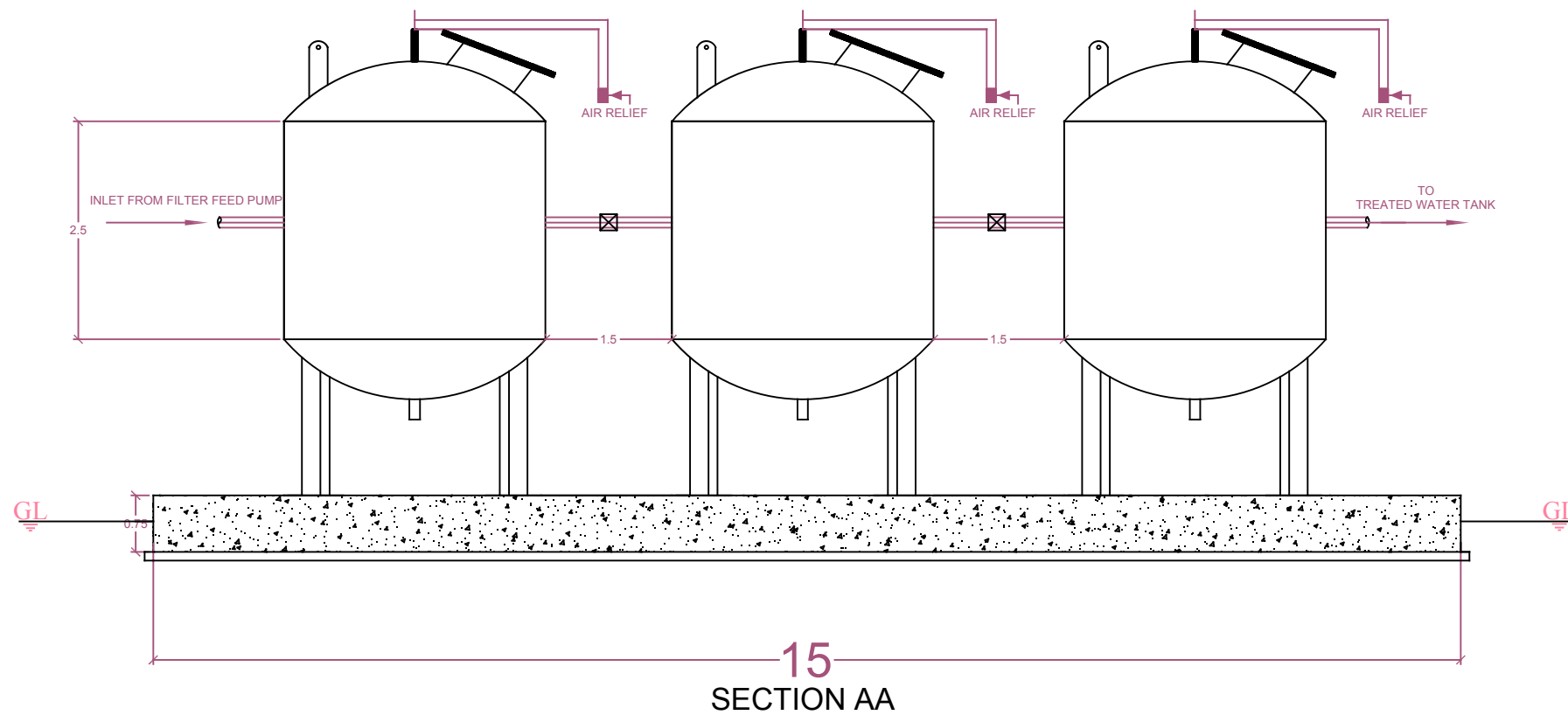
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Date

**05-01-2018**

Scale

**NTS**



**NOTES**

01. ALL DIMENSIONS ARE IN METERS UNLESS IT IS SPECIALLY MENTIONED
02. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
03. THICKNESS OF PCC SHALL BE TAKEN AS 10CM IF NOT MENTIONED OTHERWISE

**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE  
TREATMENT PLANT AT  
ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**GENERAL ARRANGEMENT OF FILTERS  
WITH FILTER FOUNDATION**

Rev

**00**

DRAWING NO

**RAM-KWA-STP-C-017**

Drawn By

**VYSHAK P.T**

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Checked By

**SOORAJ M**

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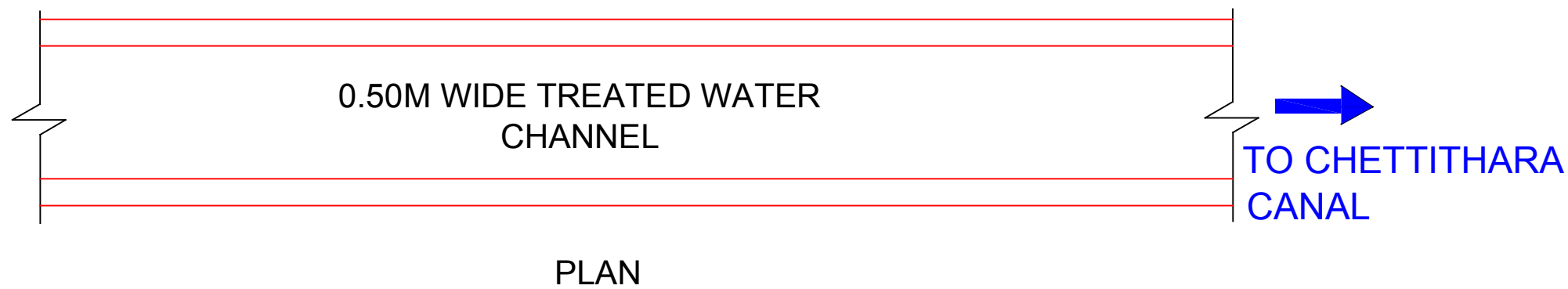
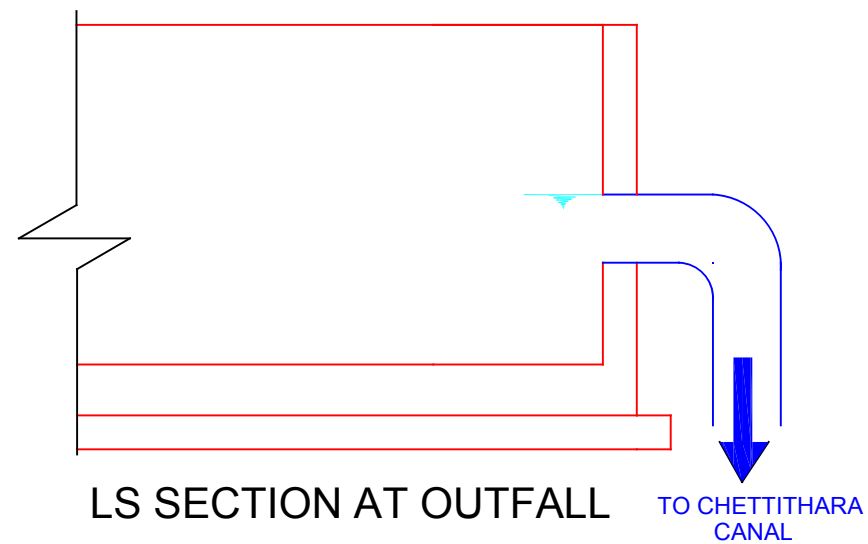
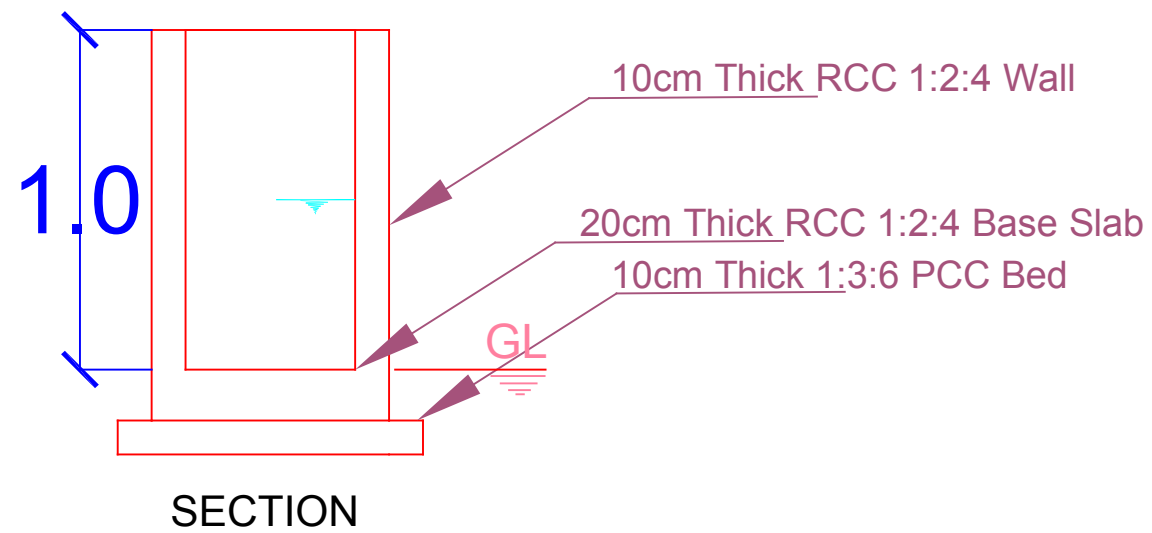
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**05-01-2018**

Scale

**NTS**

All Dimensions are in Mtrs



Length of Channel : 30m

NOTES

01. ALL DIMENSIONS ARE IN METERS UNLESS IT IS SPECIALLY MENTIONED
02. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
03. THICKNESS OF PCC SHALL BE TAKEN AS 10CM IF NOT MENTIONED OTHERWISE
04. 200MM DI PIPE SHALL BE USED AT OUTFALL

**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**GENERAL ARRANGEMENT OF  
EFFLUENT WATER CHANNEL**

Rev

**00**

DRAWING NO

**RAM-KWA-STP-C-018**

Drawn By

**VYSHAK P.T**

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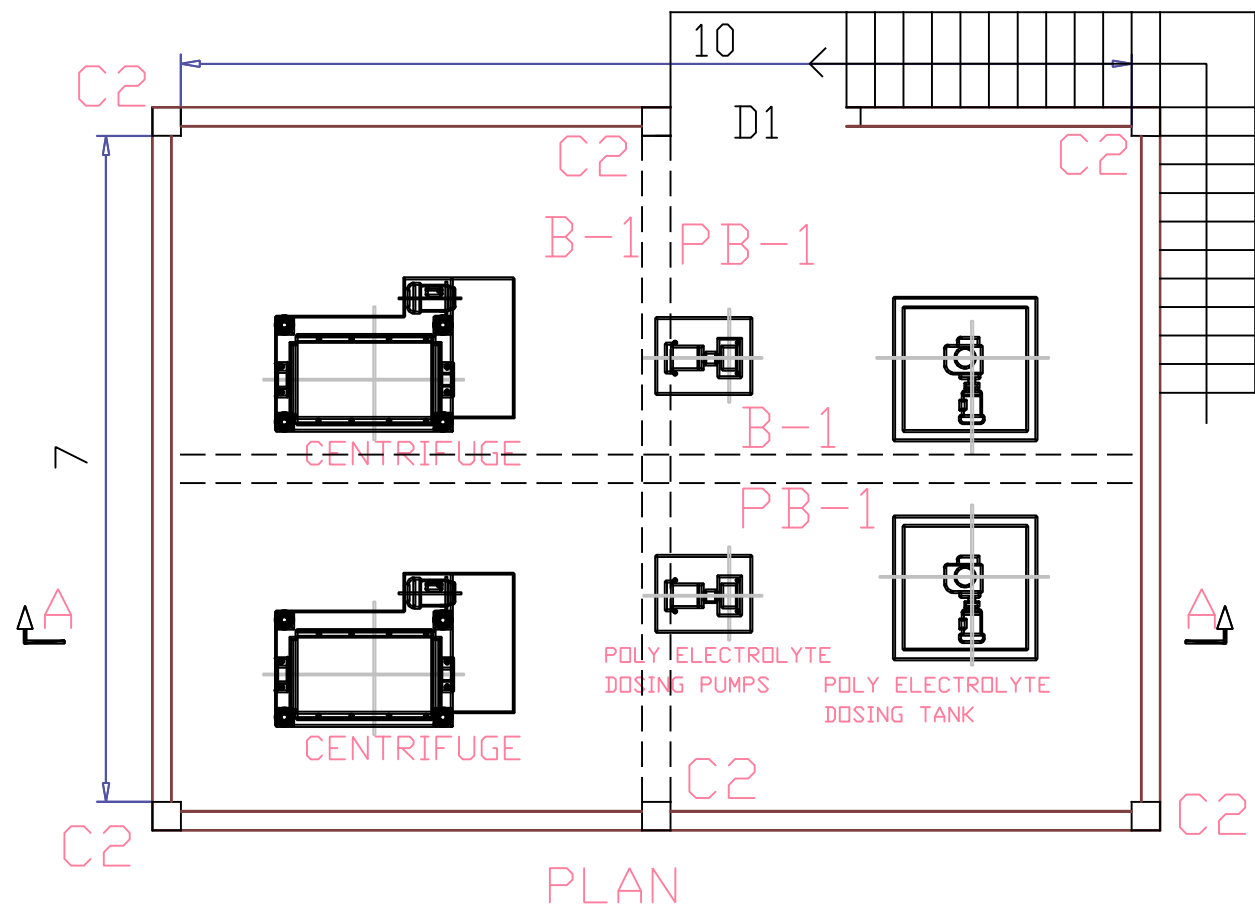
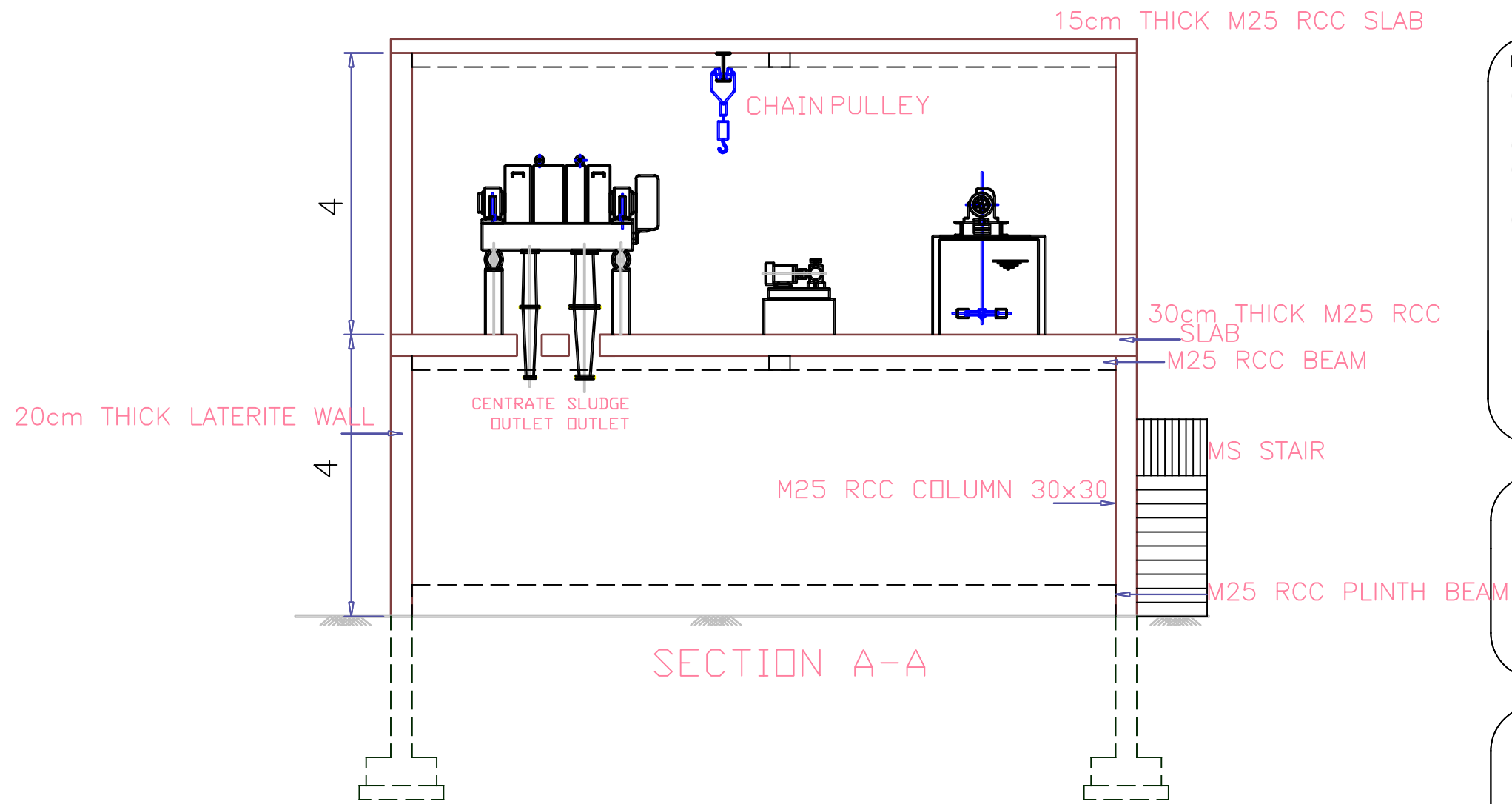
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Date

**05-01-2018**

Scale

**NTS**



NOTES

- 01. ALL DIMENSIONS ARE IN METERS UNTIL UNLESS IT IS SPECIALLY MENTIONED
- 02. ONLY WRITTEN DIMENSIONS SHOULD BE FOLLOWED
- 03. THICKNESS OF PCC SHALL BE TAKEN AS 10CM IF NOT MENTIONED SEPERATE
- 04. DEATILS OF COLUMNS & BEAMS SHALL BE TAKEN FROM COLUMN LAYOUT OF SCREEN CHANNEL

**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**GENERAL ARRANGEMENT OF  
CENTRIFUGE BUILDING**

Rev

00

DRAWING NO

RAM-KWA-STP-C-019

Drawn By

VYSHAK P.T

Sheet No

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Checked By

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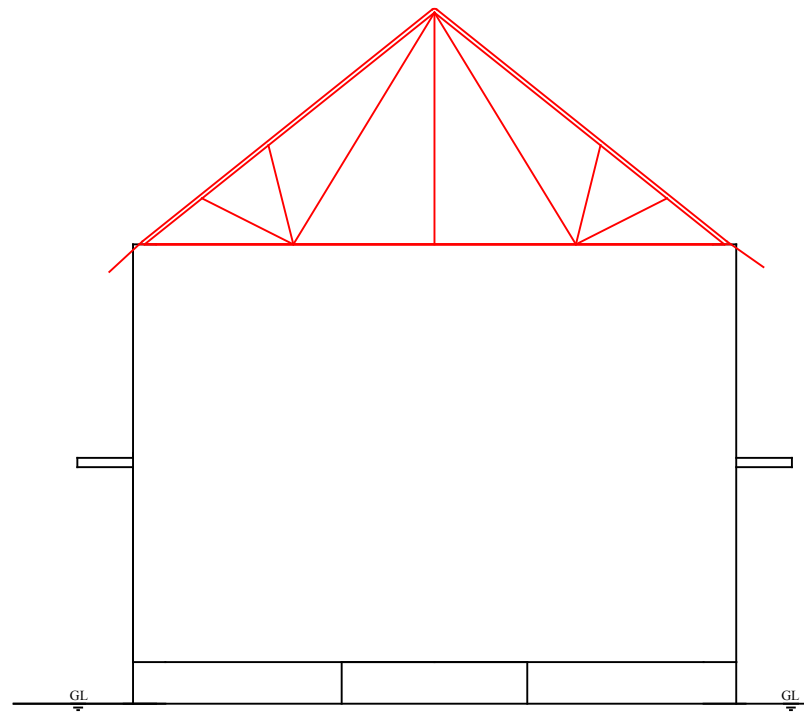
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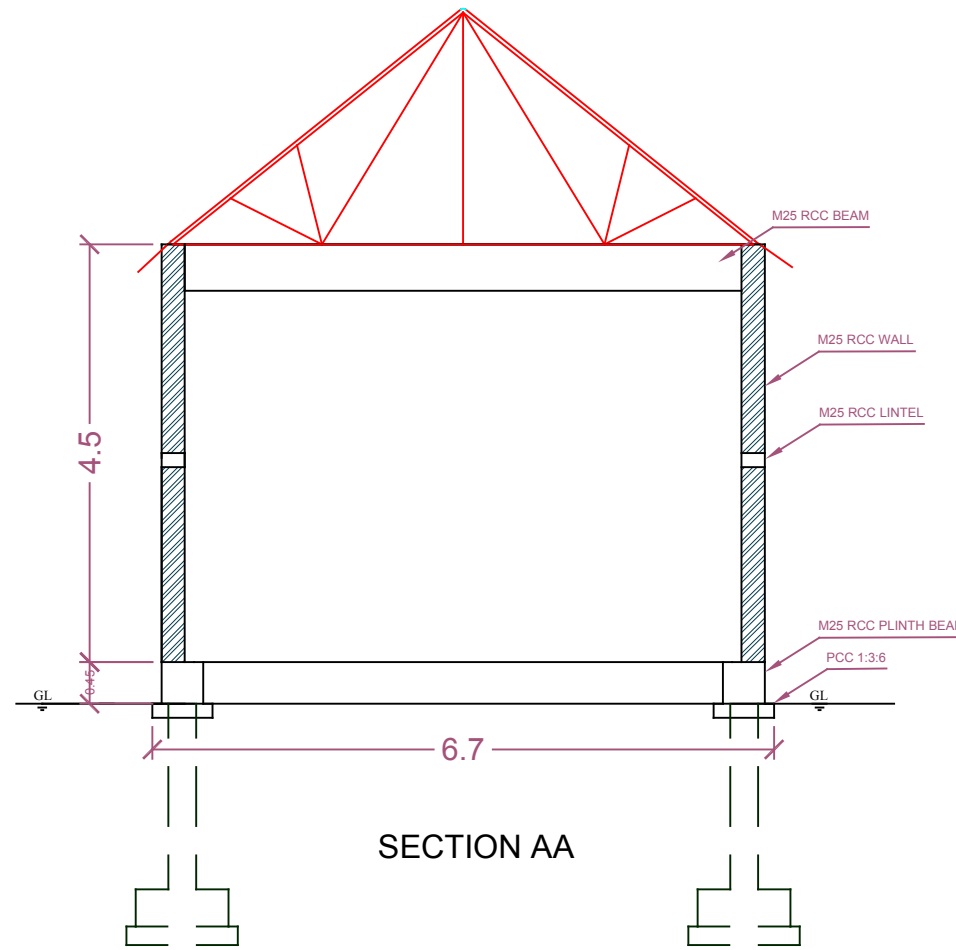
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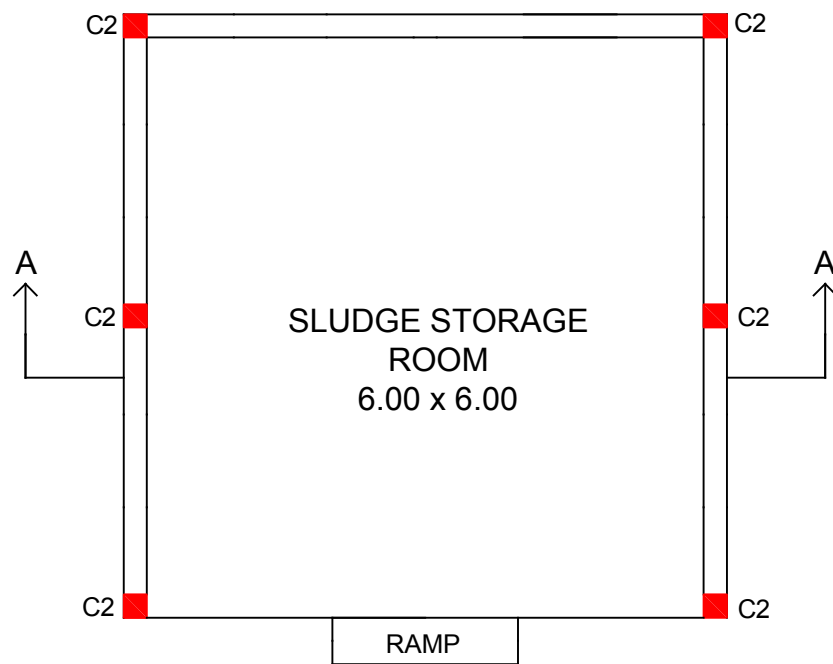
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ELEVATION



SECTION AA



PLAN

NOTES

01. ALL DIMENSIONS ARE IN METERS UNLESS IT IS SPECIALLY MENTIONED
02. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
03. THICKNESS OF PCC SHALL BE TAKEN AS 10CM IF NOT MENTIONED OTHERWISE
04. ALL BEAMS ARE OF SIZE 30 x 30 (cm)
05. COLUMN & BEAM DESIGNS SHALL BE AS PER THE DETAILED LAYOUT
06. REFER TRUSS DRAWING FOR THE ROOF TRUSS DETAILING

**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**GENERAL ARRANGEMENT OF  
SLUDGE STORAGE YARD**

Rev

**00**

DRAWING NO

**RAM-KWA-STP-C-020**

Drawn By

**VYSHAK P.T**

Sheet No

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Checked By

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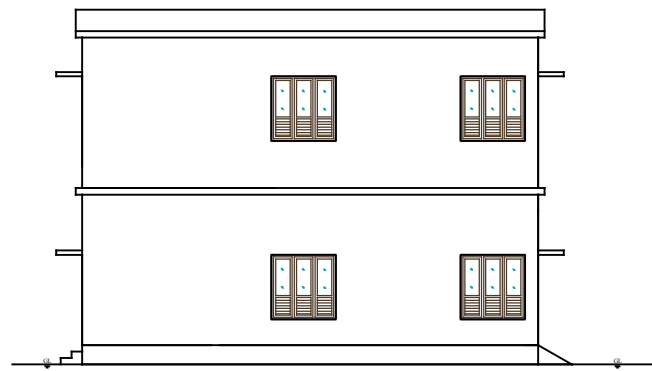
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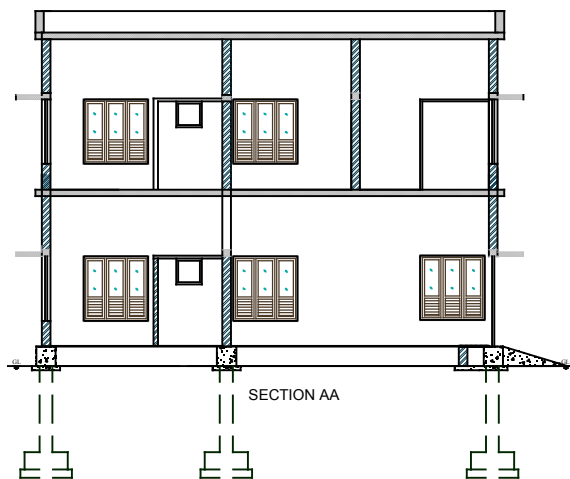
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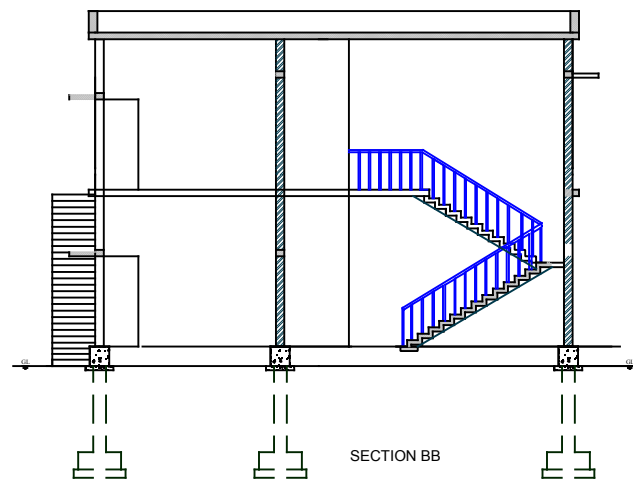
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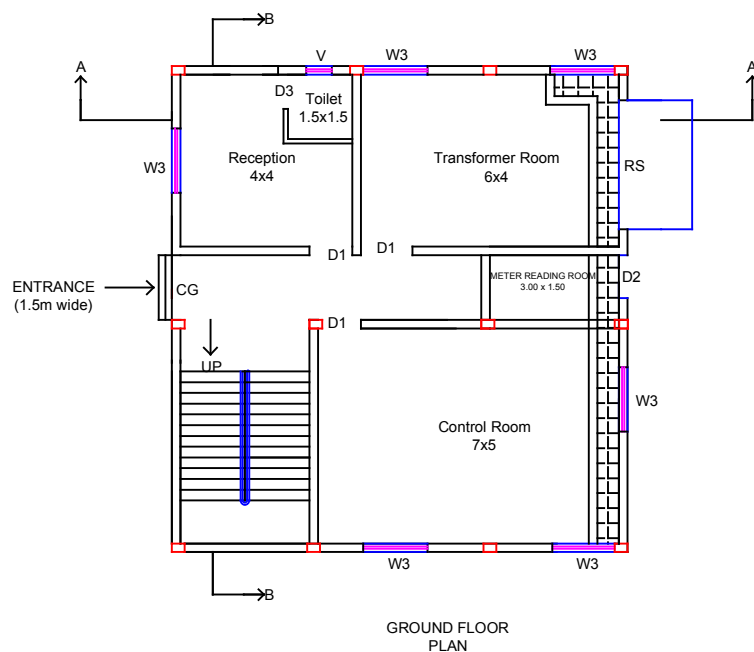
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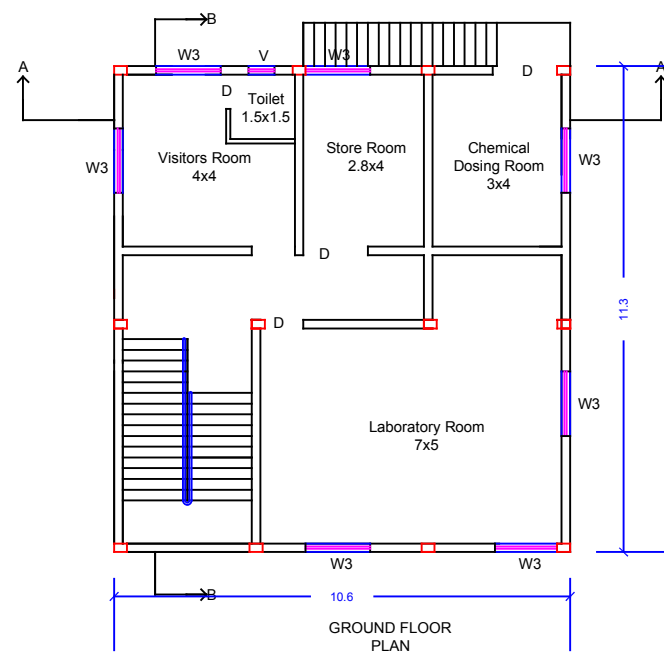
SECTION AA



SECTION BB



GROUND FLOOR PLAN



GROUND FLOOR PLAN

NOTES

01. ALL DIMENSIONS ARE IN METERS UNLESS IT IS SPECIALLY MENTIONED
02. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
03. THICKNESS OF PCC SHALL BE TAKEN AS 10CM IF NOT MENTIONED OTHERWISE
04. ALL BEAMS ARE OF SIZE 30 x 30 (cm)
05. COLUMN & BEAM DESIGNS SHALL BE AS PER THE DETAILED LAYOUT
06. DASHED LINES ARE SUPPORTS BELOW THE BASE SLAB. REFER DETAILED DRAWING FOR THE SAME
07. REFER SPECIFICATION REPORT FOR DETAILED SPECIFICATIONS

**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**GENERAL ARRANGEMENT OF TRANSFORMER HOUSING, CONTROL ROOM & LABORATORY**

Rev

**00**

DRAWING NO

**RAM-KWA-STP-C-021**

Drawn By

**VYSHAK P.T**

Sheet No

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Date

**05-01-2018**

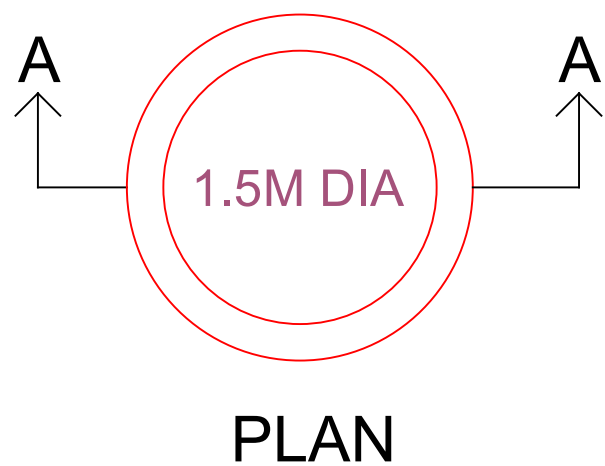
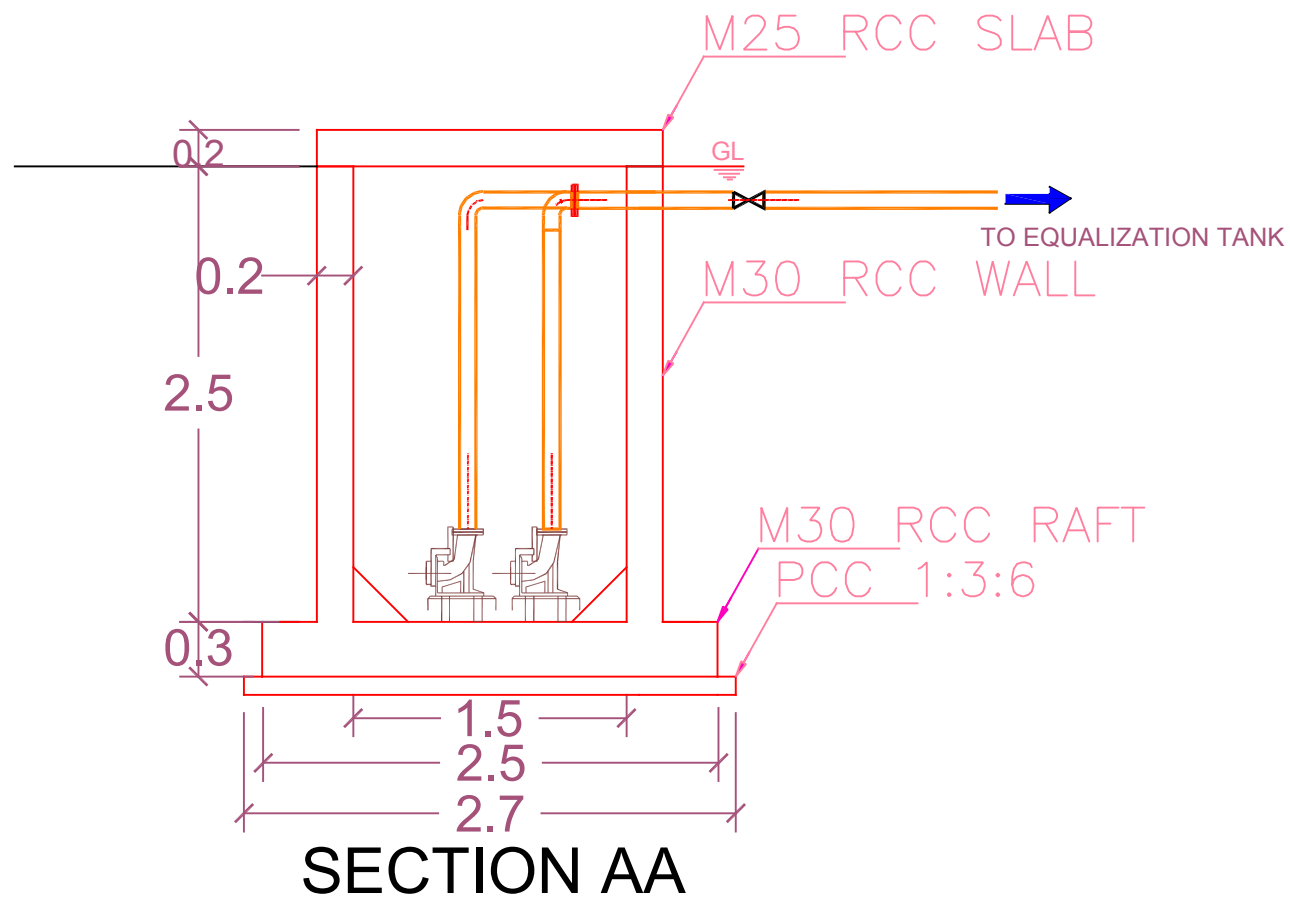
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**NTS**

All Dimensions are in Mtrs



# CENTRATE SUMP



## NOTES

01. ALL DIMENSIONS ARE IN METERS UNLESS IT IS SPECIALLY MENTIONED
02. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
03. THICKNESS OF PCC SHALL BE TAKEN AS 10CM IF NOT MENTIONED OTHERWISE

**FOR ESTIMATION PURPOSE ONLY**

## PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

## CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

## CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

## DRAWING TITLE

**GENERAL ARRANGEMENTS OF  
CENTRATE SUMP**

## Rev

**00**

## DRAWING NO

**RAM-KWA-STP-C-022**

## Drawn By

**VYSAKH T**

## Sheet No

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## Checked By

**SOORAJ M**

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


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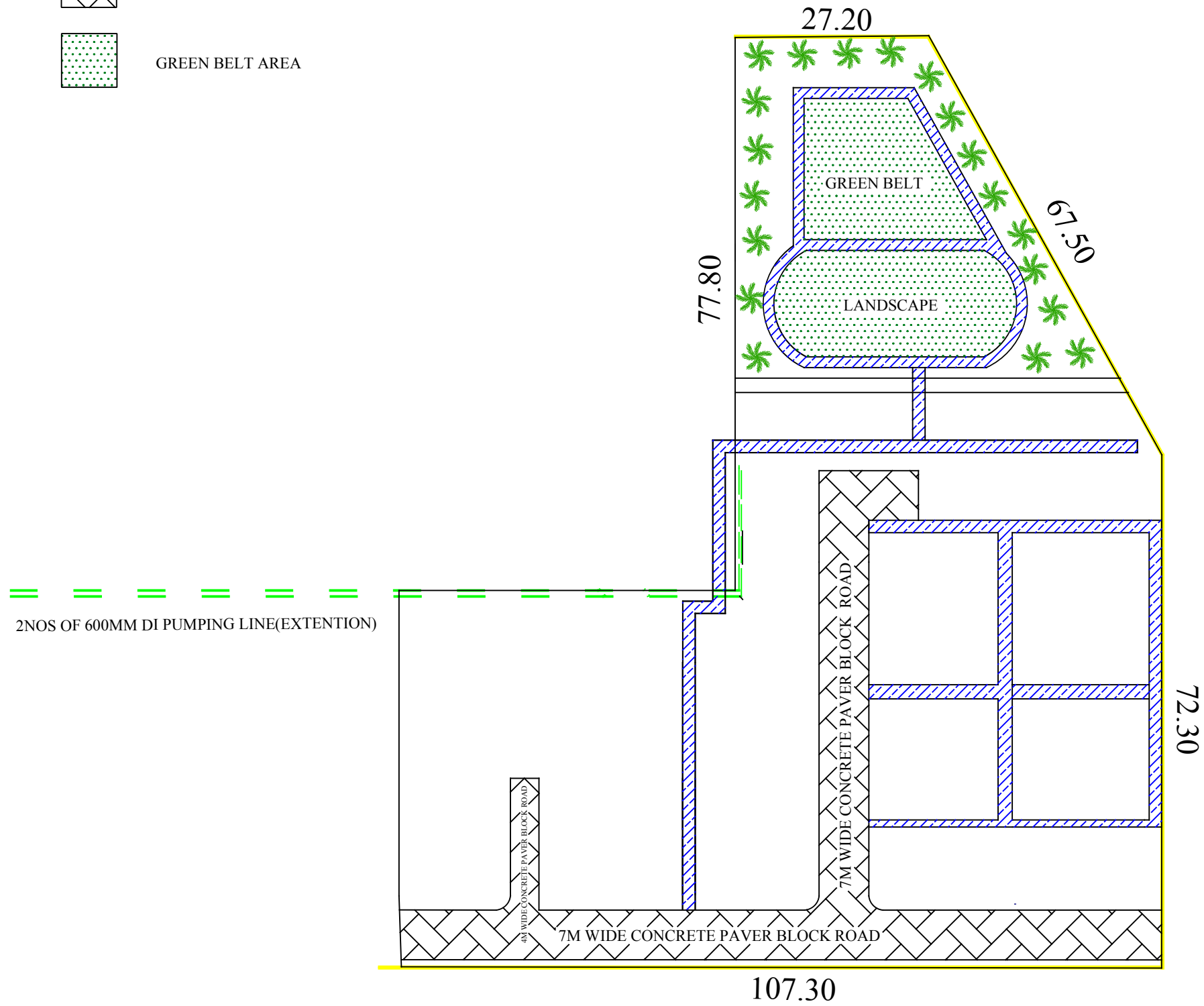
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**05-01-2018**

## Scale

**NTS**

-  WALKWAYS AT GL
-  CONCRETE PAVER BLOCK ROADS
-  GREEN BELT AREA



LAYOUT OF SEWERAGE TREATMENT PLANT AT ELAMKULAM

NOTES

TOTAL AREA OF DEVELOPMENT : 9600SQM  
 AREA OF WALKWAY : 800SQM  
 AREA OF LANDSCAPING : 1950SQM  
 AREA OF INTERNAL ROADS : 1325SQM

PROJECT TITLE

CONSTRUCTION OF 5MLD SEWAGE  
 TREATMENT PLANT AT  
 ELAMKULAM, KOCHI

CLIENT



KERALA WATER AUTHORITY  
 KOCHI

CONSULTANT



RAM BIOLOGICALS  
 CALICUT

DRAWING TITLE

GENERAL ARRANGEMENT OF INTERNAL ROADS,  
 WALKWAYS, DRAINS, LANDSCAPING LAYOUT

Rev

00

DRAWING NO

RAM-KWA-STP-C-022

Drawn By

VYSHAK P.T

Sheet No

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Checked By

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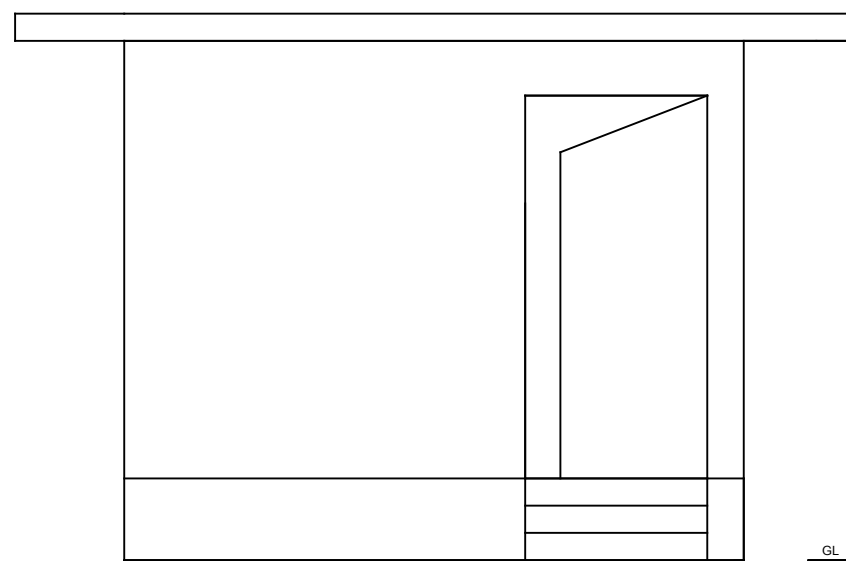
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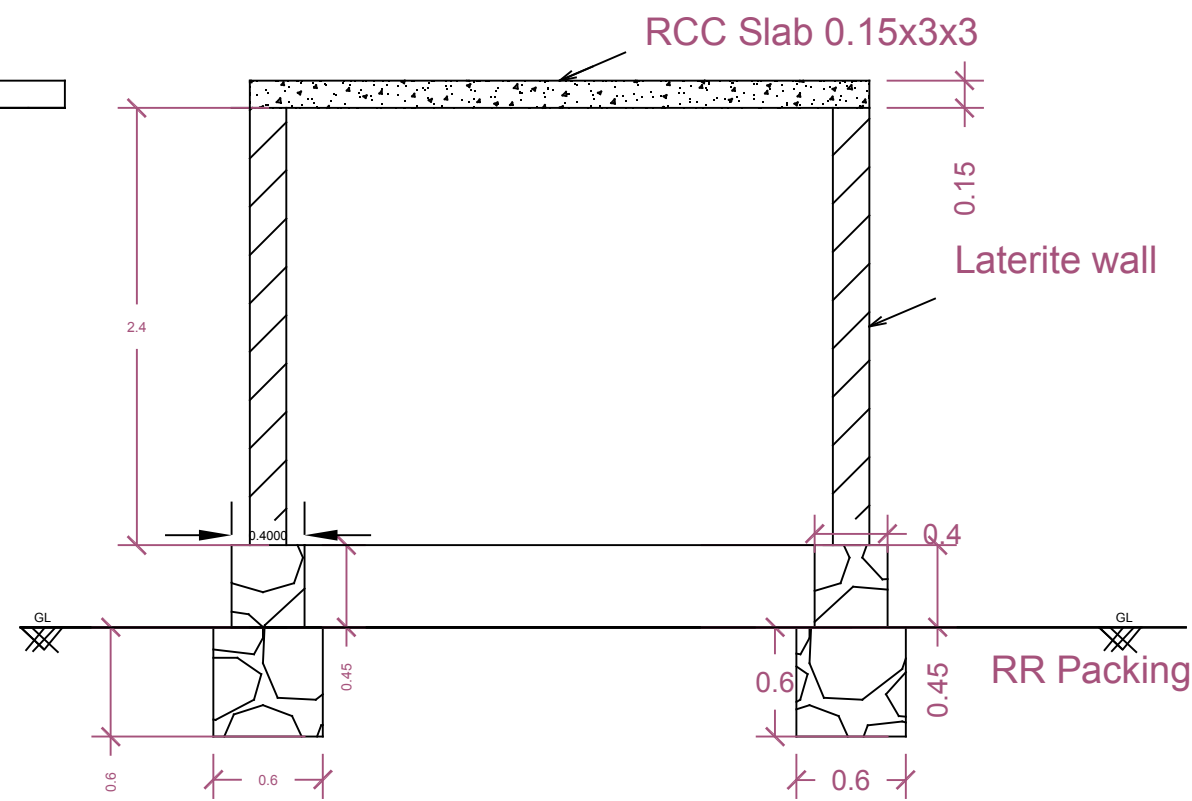
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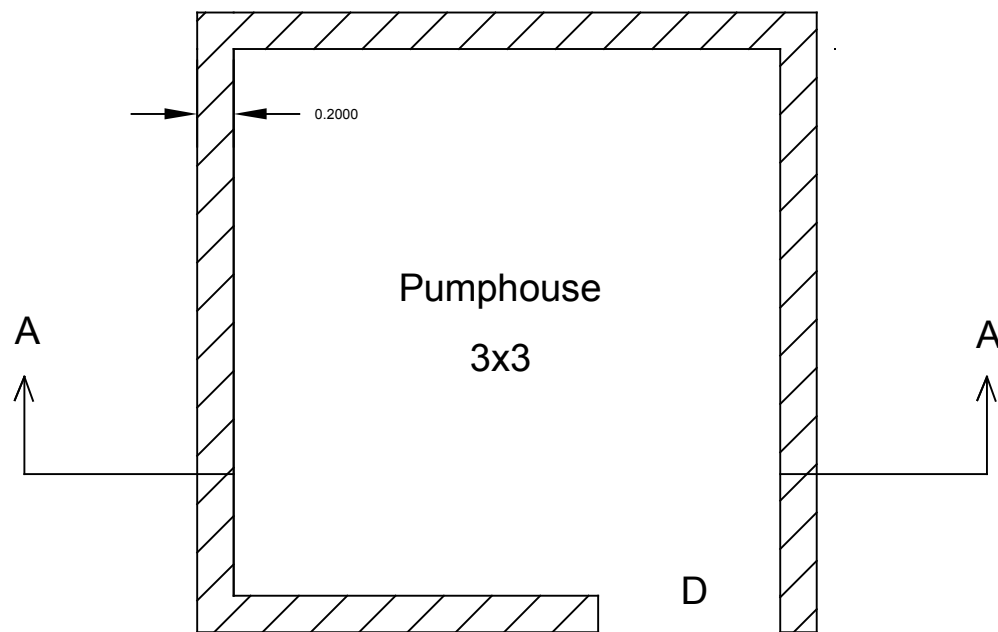
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ELEVATION



SECTION A-A



PLAN

NOTES

- 01. ALL DIMENSIONS ARE IN METERS UNLESS IT IS SPECIALLY MENTIONED
- 02. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
- 03. THICKNESS OF PCC SHALL BE TAKEN AS 10CM IF NOT MENTIONED OTHERWISE

**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**GENERAL ARRANGEMENTS OF  
PUMP HOUSE - TYPICAL**

Rev

**00**

DRAWING NO

**RAM-KWA-STP-C-024**

Drawn By

**VYSAKH T**

Sheet No

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Checked By

**SOORAJ M**

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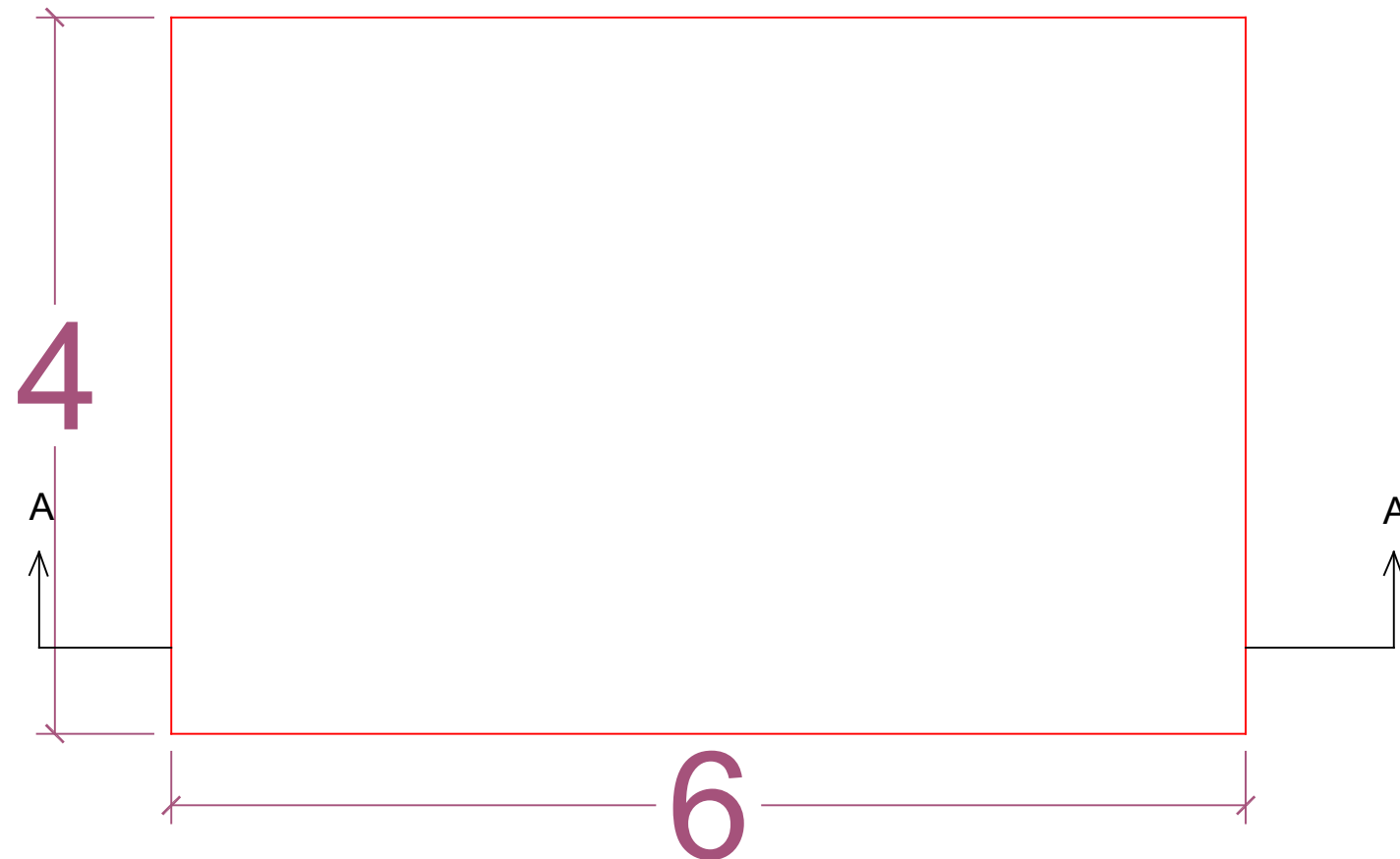
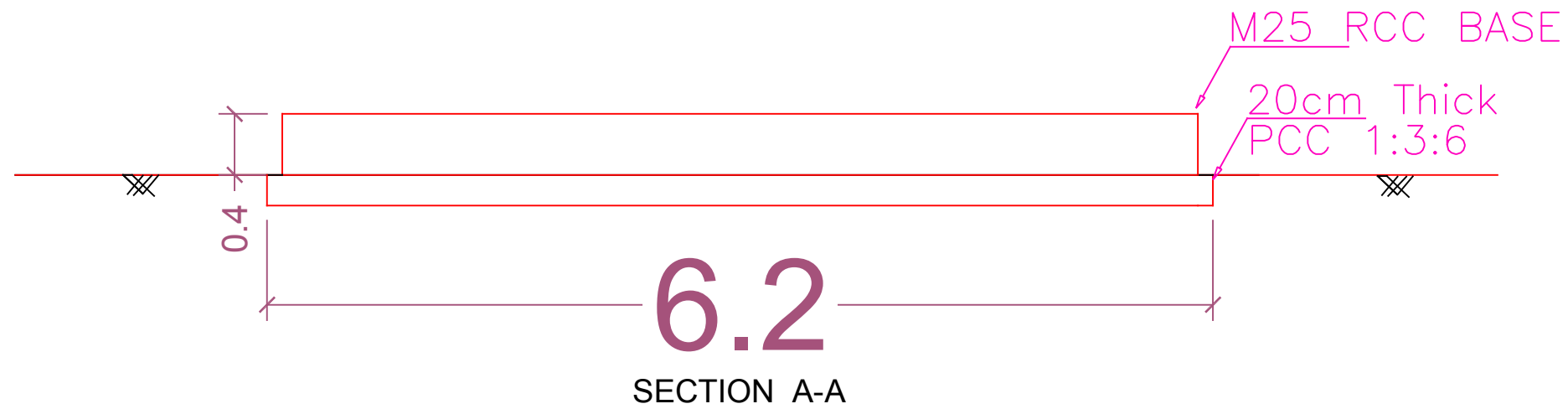
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Date

**05-01-2018**

Scale

**NTS**



NOTES

01. ALL DIMENSIONS ARE IN METERS UNLESS IT IS SPECIALLY MENTIONED
02. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED
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**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**GENERAL ARRANGEMENTS OF  
GENERATOR FOUNDATION**

Rev

**00**

DRAWING NO

**RAM-KWA-STP-C-025**

Drawn By

**VYSAKH T**

Sheet No

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**SOORAJ M**

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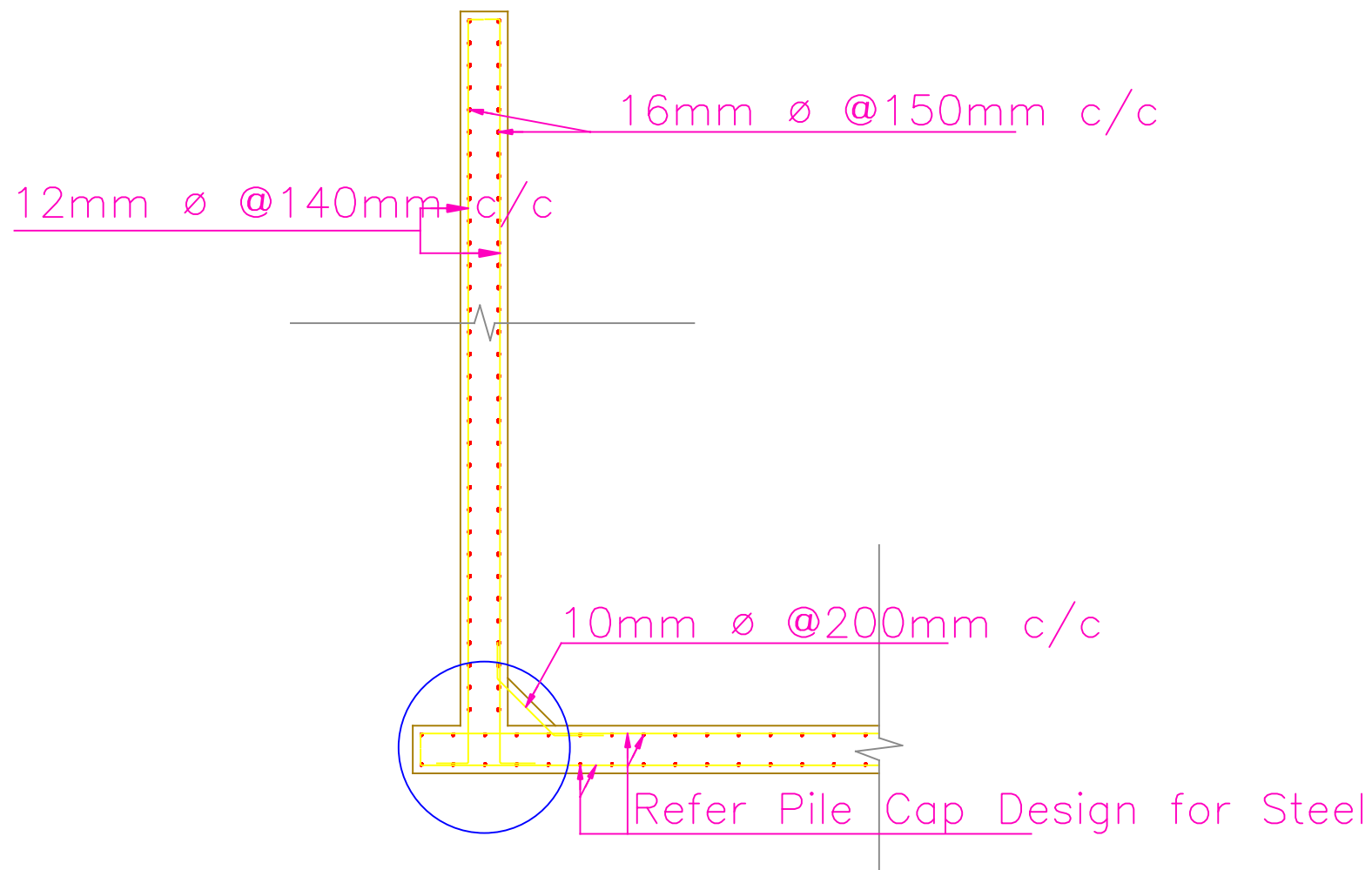
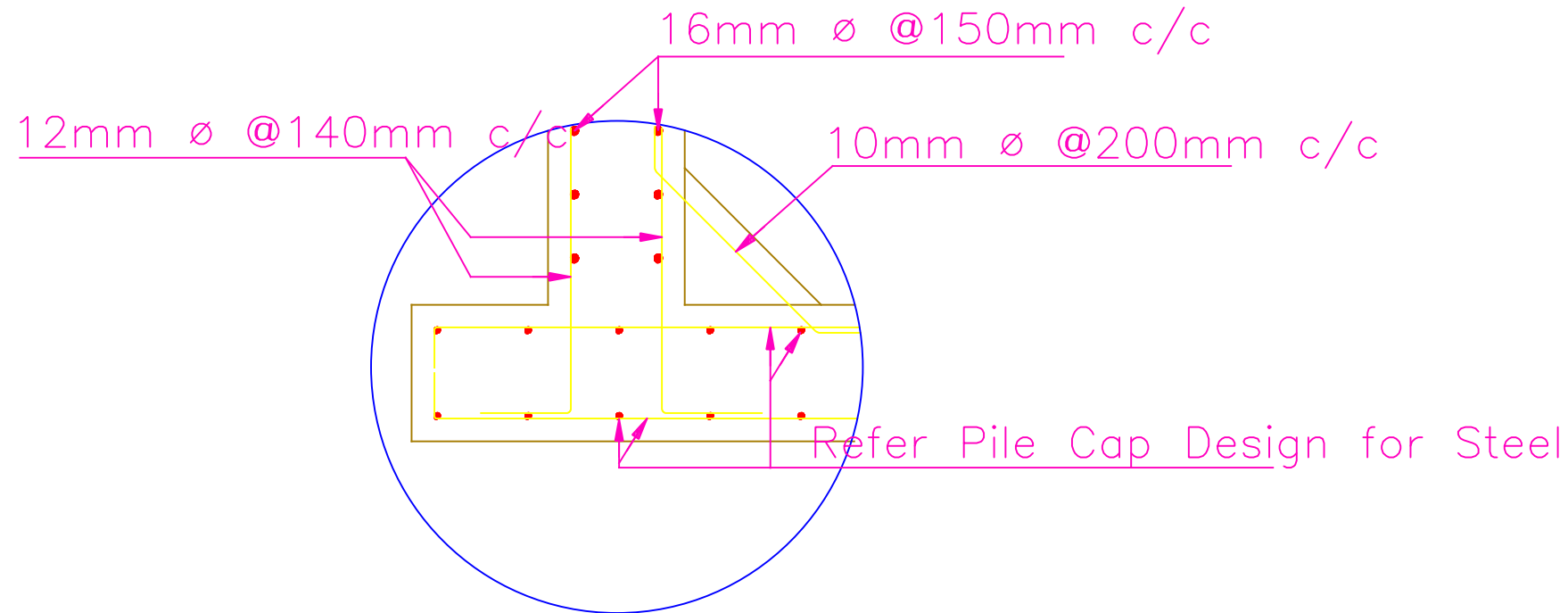
Date

**05-01-2018**

Scale

**NTS**

# STRUCTURAL DRAWINGS



**NOTES**

- 01. ALL THE PCC WHEREVER MENTIONED IN THE STRUCTURAL/CIVIL DRAWING SHALL BE OF PCC 1:3:6.
- 02. ALL THE REBARS USED FOR THE STP COMPONENTS HAVING DIRECT CONTACT WITH EFFLUENT SHALL BE OF Fe415 EPOXY COATED HYSD BARS
- 03. ALL THE RCC WORKS OF STP COMPONENTS WHERE HAVING DIRECT CONTACT WITH EFFLUENT SHALL BE OF M30 CONCRETE WITH SRC CEMENT. MINIMUM OF CEMENT SHALL BE 350kg/m<sup>3</sup>
- 04. EFFECTIVE COVER OF ALL WATER TANKS SHALL BE 50mm
- 05. NOMINAL COVER FOR ALL OTHER STRUCTURAL COMPONENTS SHALL BE AS PER IS 456:2000.
- 06. THE ENTIRE WATER TANK INSIDE SHALL BE PAINTED WITH TWO COATS OF WATER PROOFING CEMENT PAINT OF APPROVED QUALITY.

**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**STRUCTURAL DETAILING OF  
EQUALIZATION TANK**

Rev

**00**

DRAWING NO

**RAM-KWA-STP-S-001**

Drawn By

**VYSHAK P.T**

Sheet No

**01**

Checked By

**SOORAJ M**

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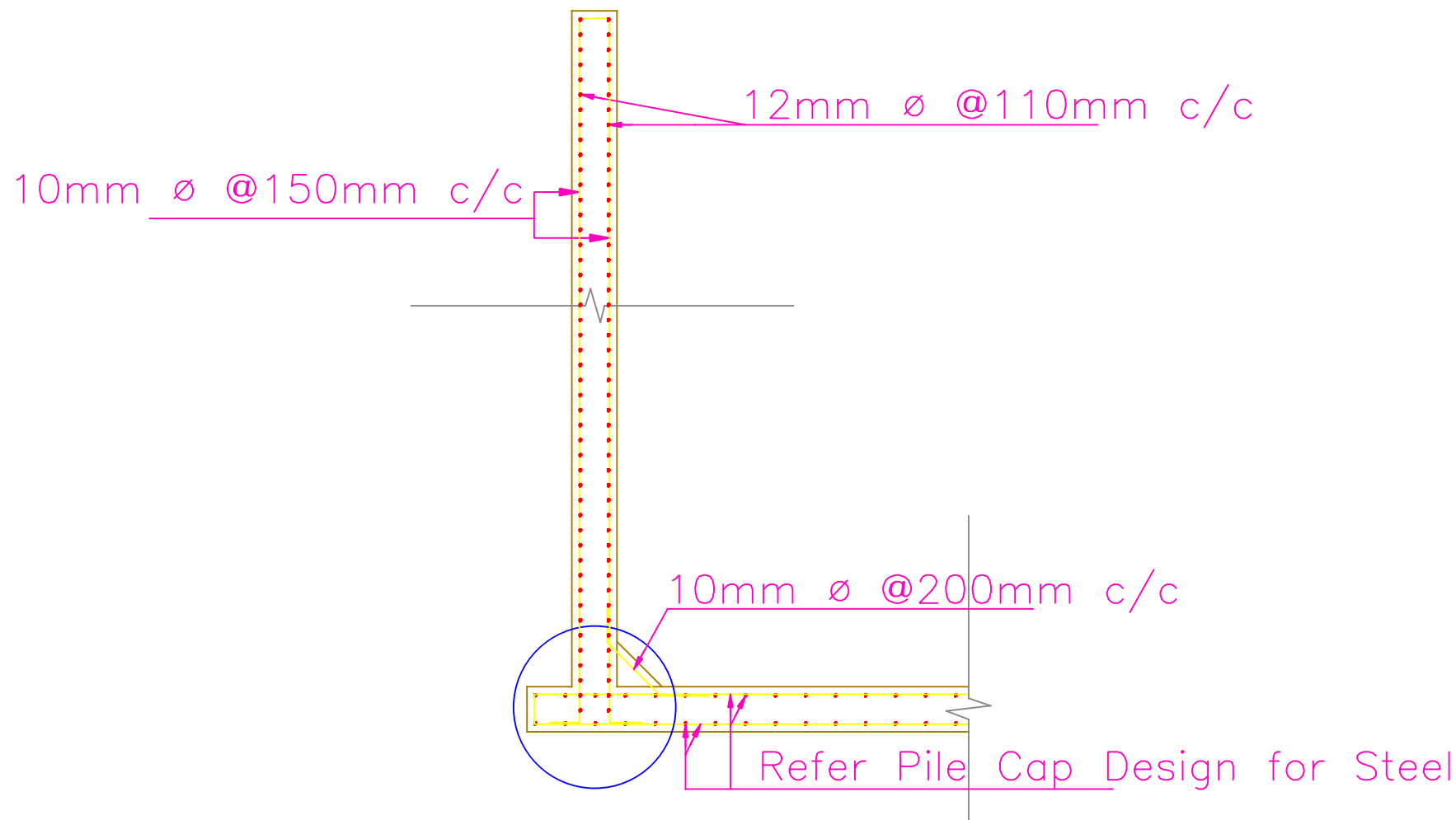
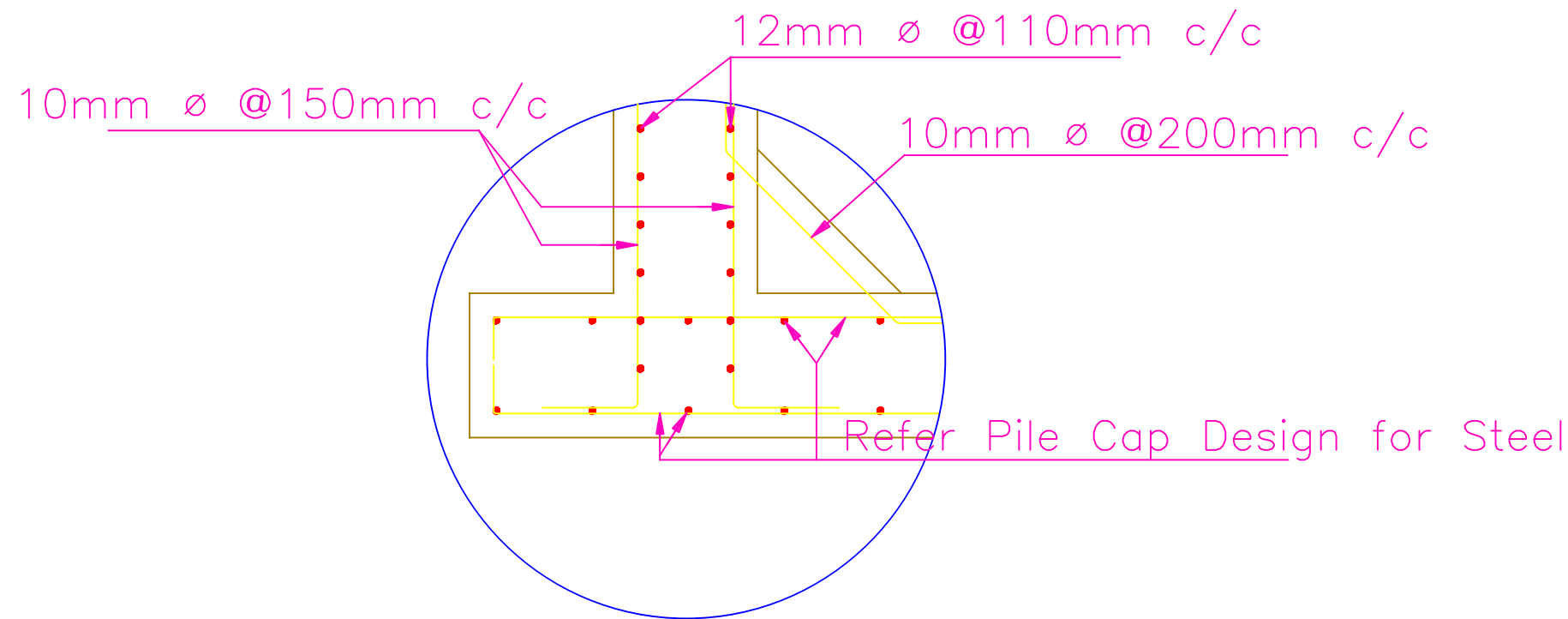
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Date

**05-01-2018**

Scale

**NTS**



**NOTES**

01. ALL THE PCC WHEREVER MENTIONED IN THE STRUCTURAL/CIVIL DRAWING SHALL BE OF PCC 1:3:6.
02. ALL THE REBARS USED FOR THE STP COMPONENTS HAVING DIRECT CONTACT WITH EFFLUENT SHALL BE OF Fe415 EPOXY COATED HYSD BARS
03. ALL THE RCC WORKS OF STP COMPONENTS WHERE HAVING DIRECT CONTACT WITH EFFLUENT SHALL BE OF M30 CONCRETE WITH SRC CEMENT. MINIMUM OF CEMENT SHALL BE 350kg/m<sup>3</sup>
04. EFFECTIVE COVER OF ALL WATER TANKS SHALL BE 50mm
05. NOMINAL COVER FOR ALL OTHER STRUCTURAL COMPONENTS SHALL BE AS PER IS 456:2000.
06. THE ENTIRE WATER TANK INSIDE SHALL BE PAINTED WITH TWO COATS OF WATER PROOFING CEMENT PAINT OF APPROVED QUALITY.

**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**STRUCTURAL DETAILING OF MBBR TANK**

Rev

**00**

DRAWING NO

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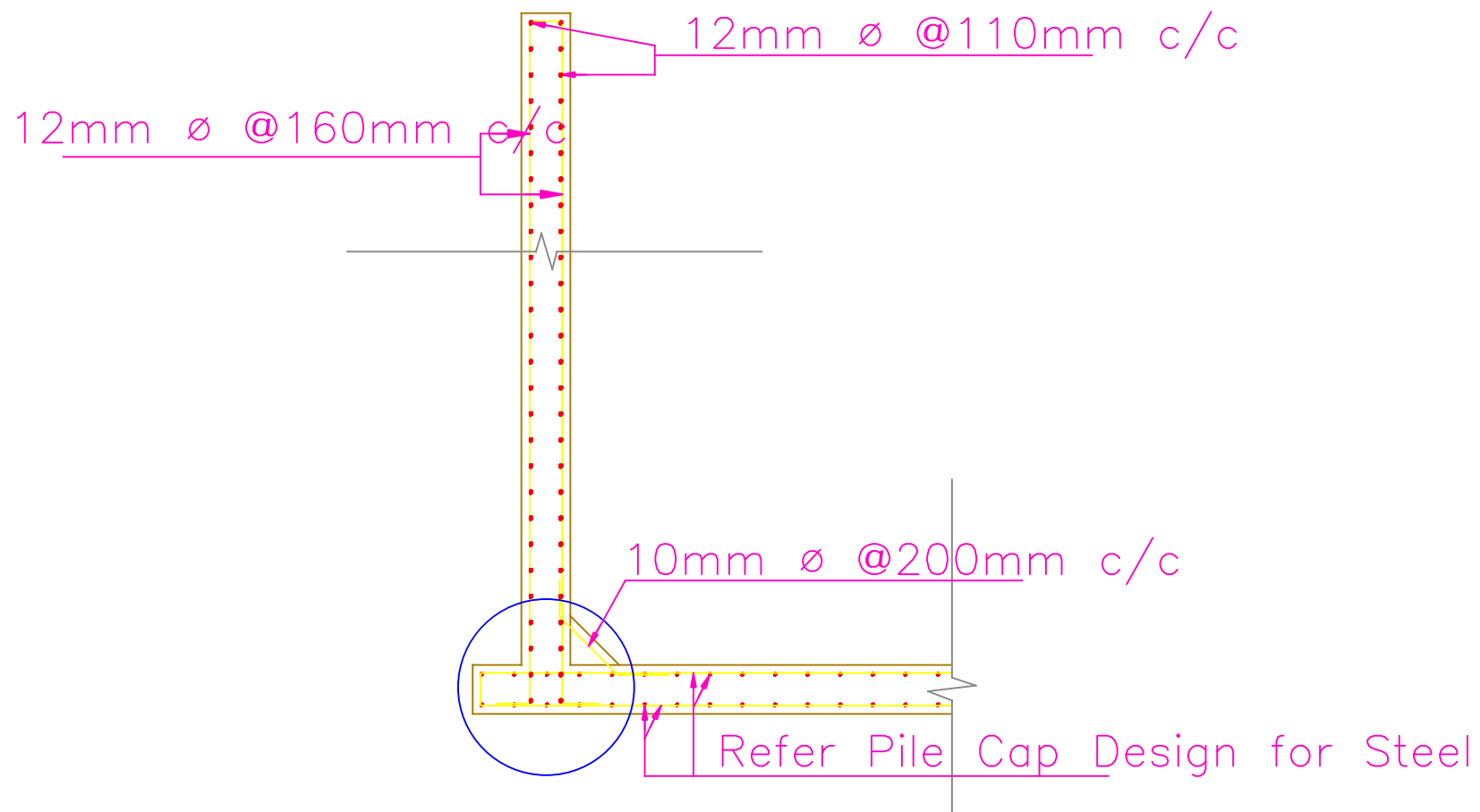
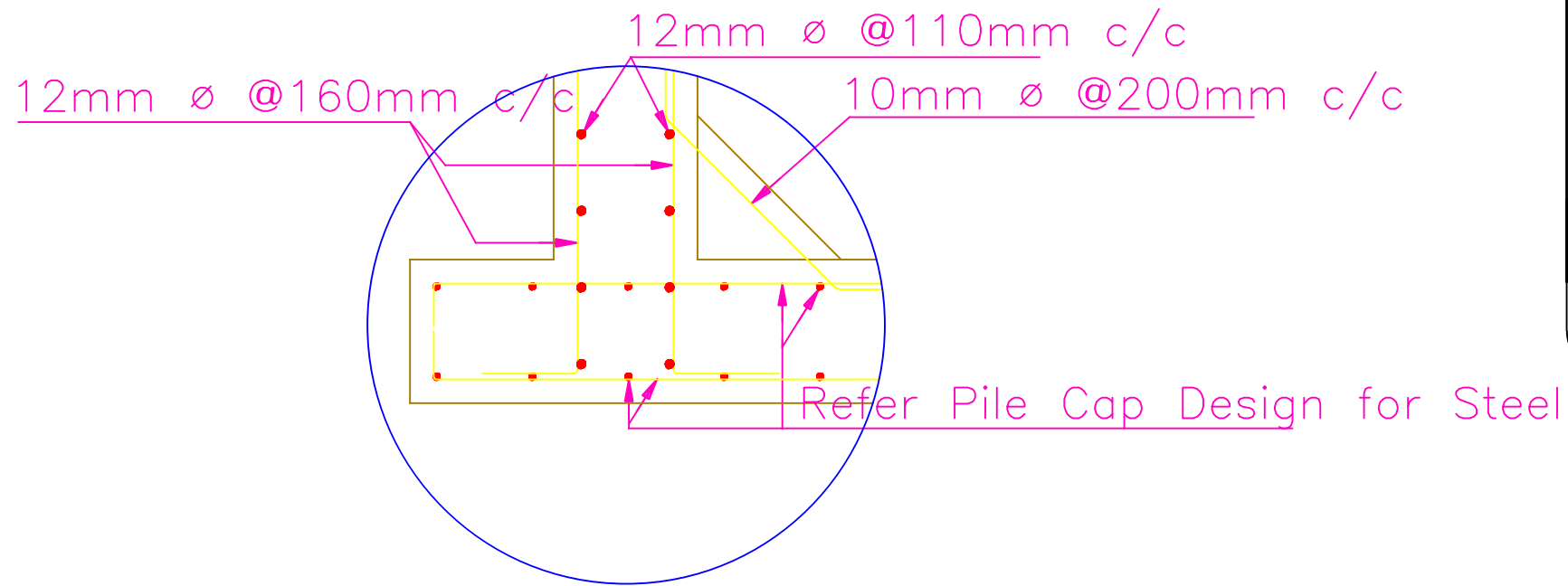
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Date

**05-01-2018**

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**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**STRUCTURAL DETAILING OF  
SECONDARY CLARIFIER**

Rev

**00**

DRAWING NO

**RAM-KWA-STP-S-005**

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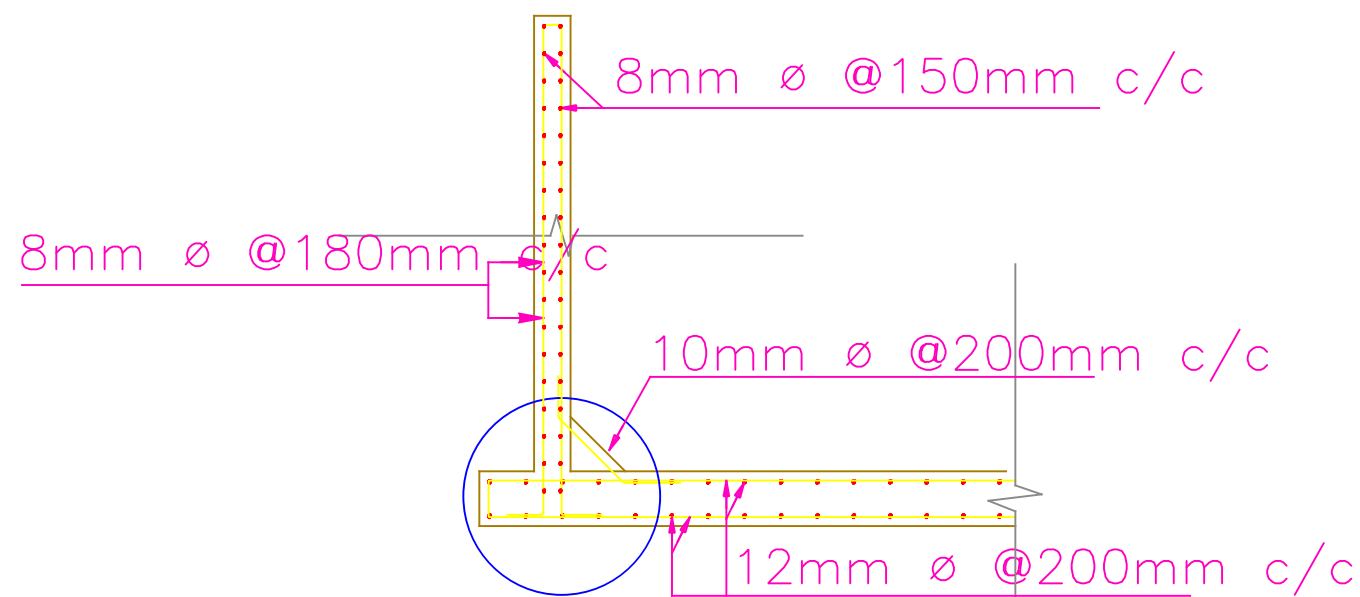
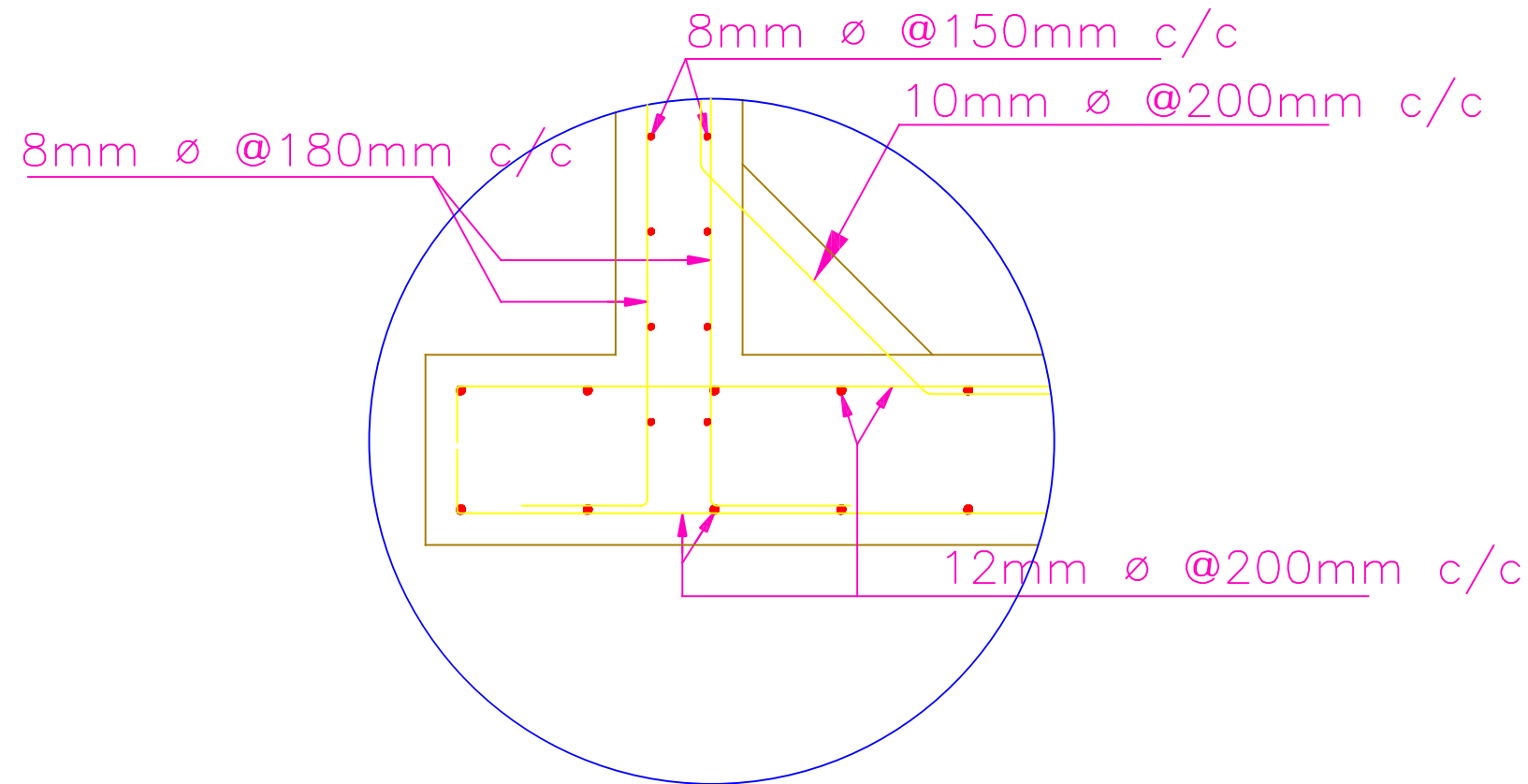
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**05-01-2018**

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**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**STRUCTURAL DETAILING OF SLUDGE SUMP & THICKENED SLUDGE SUMP**

Rev

**00**

DRAWING NO

**RAM-KWA-STP-S-004**

Drawn By

**VYSHAK P.T**

Sheet No

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**SOORAJ M**

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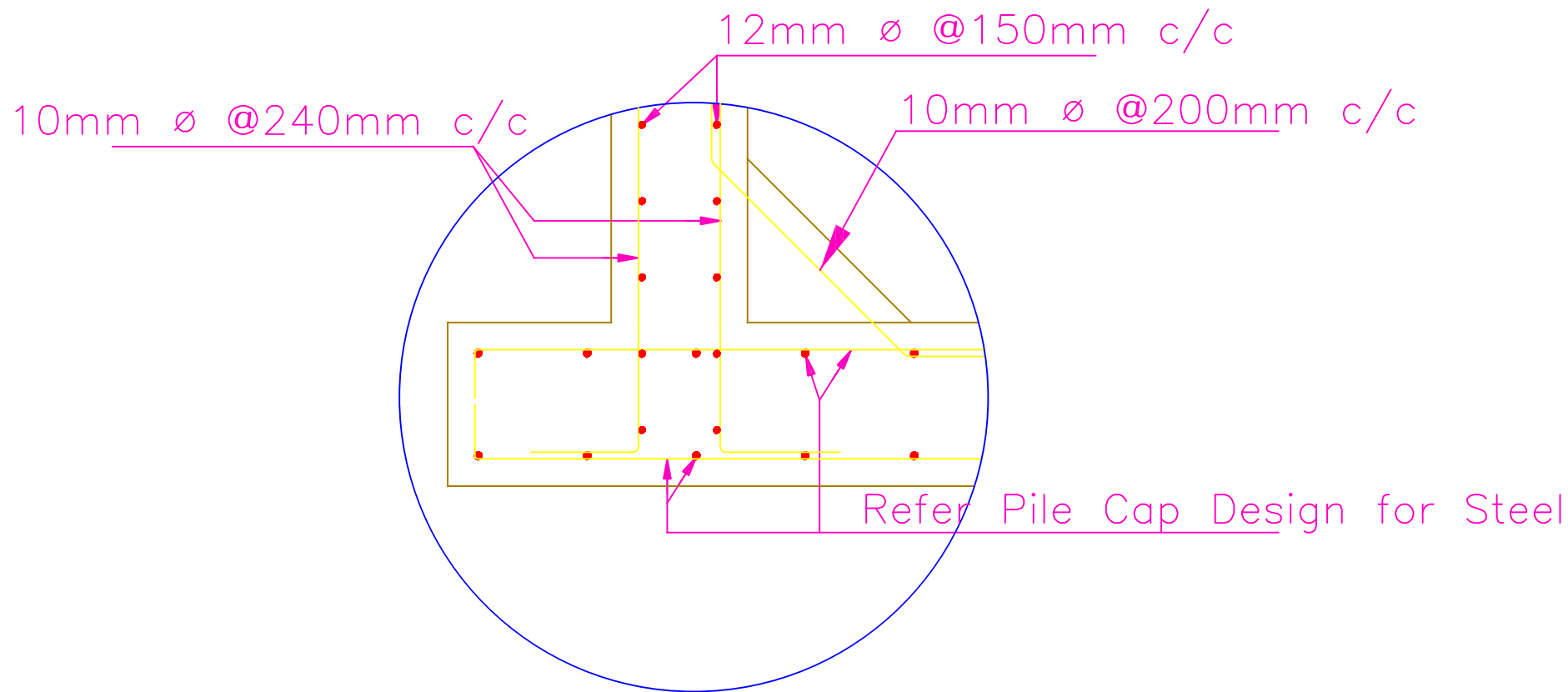
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Date

**05-01-2018**


Scale


**NTS**



- NOTES**
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- FOR ESTIMATION PURPOSE ONLY**

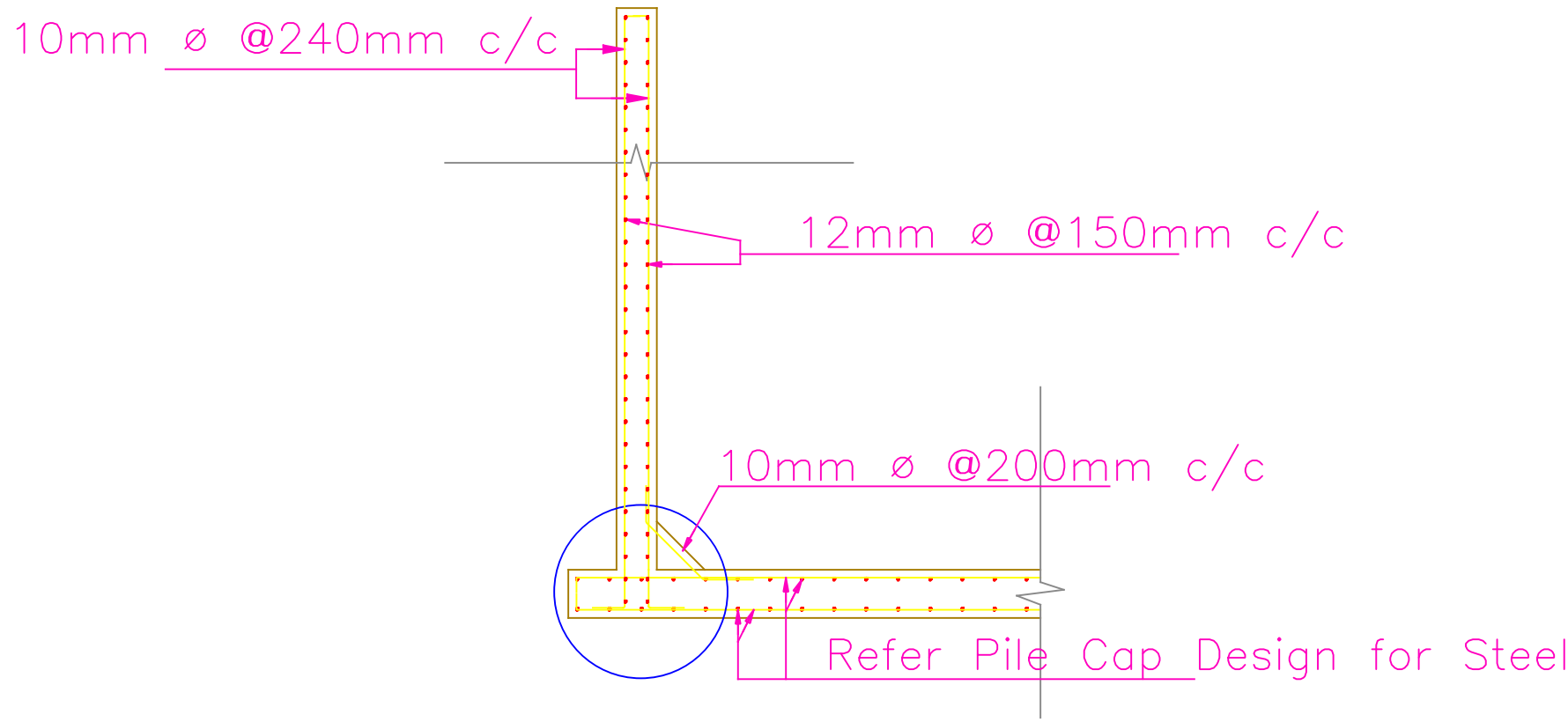
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**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

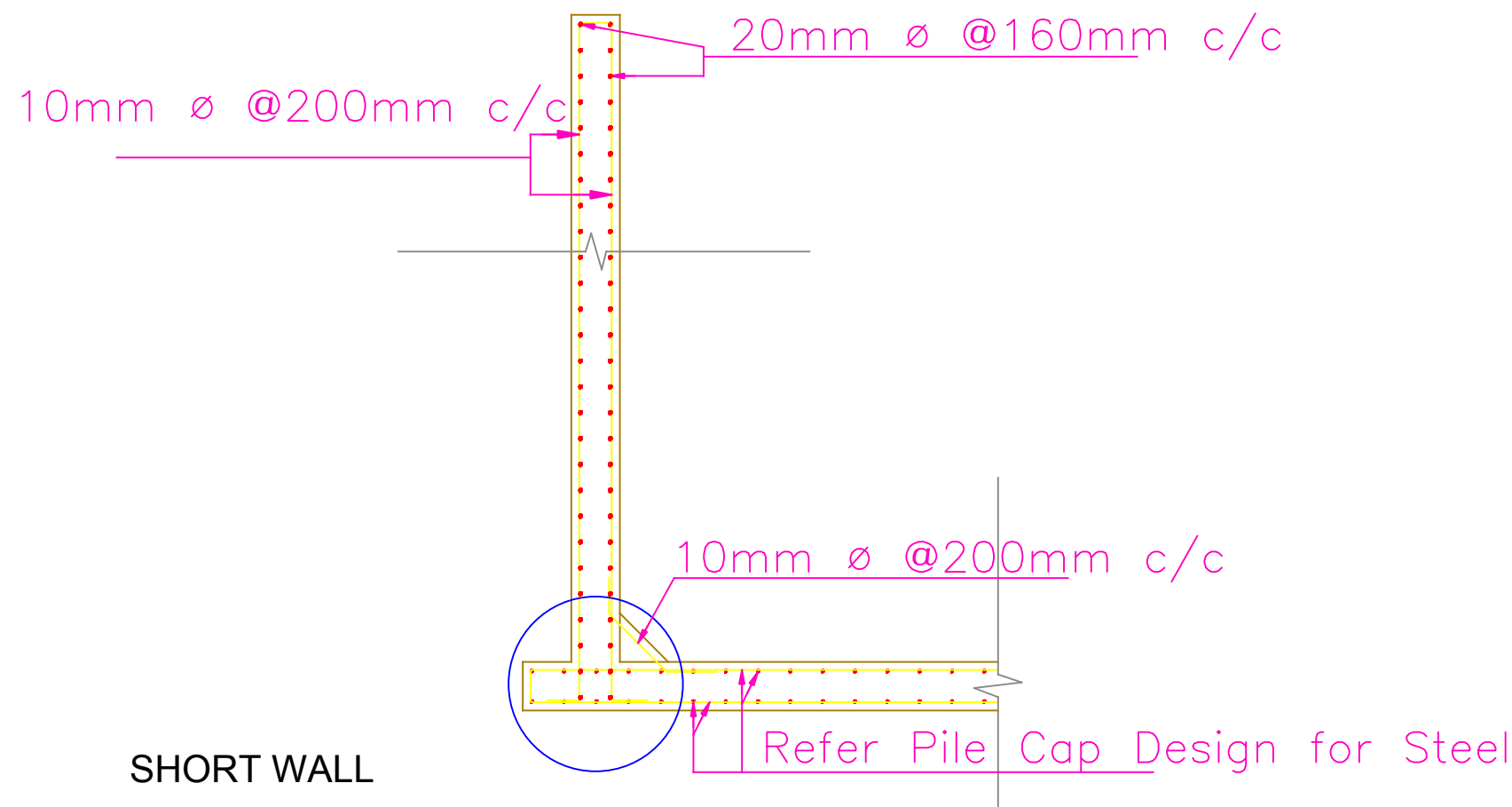
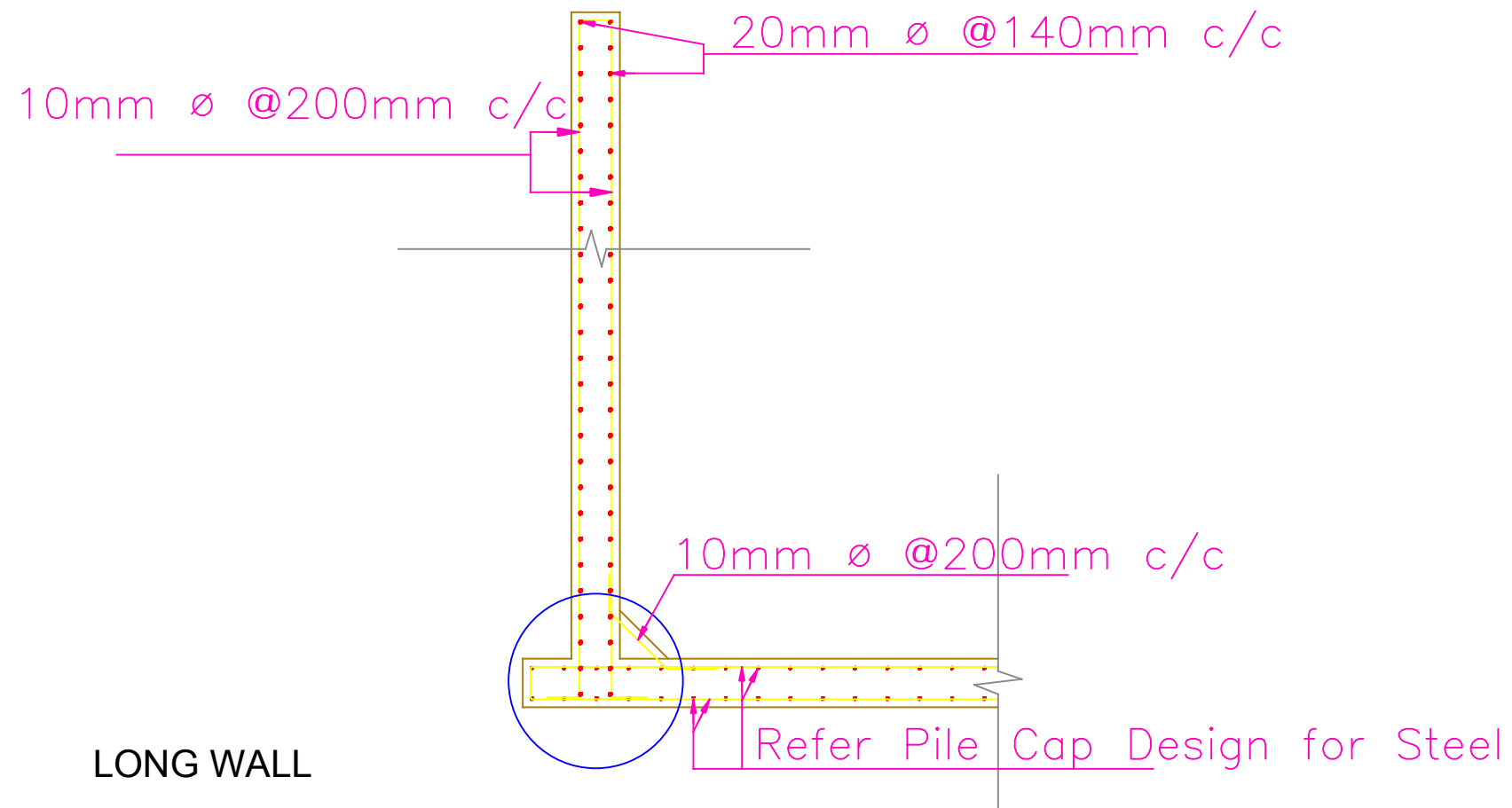
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 **KERALA WATER AUTHORITY KOCHI**

CONSULTANT  
 **RAM BIOLOGICALS CALICUT**

DRAWING TITLE	STRUCTURAL DETAILING OF SLUDGE THICKENER TANK	Rev
DRAWING NO	RAM-KWA-STP-S-005	00

Drawn By	VYSHAK P.T	Sheet No	01
Checked By	SOORAJ M	Sheet Size	A-3
Date	05-01-2018	Scale	NTS





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**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE **STRUCTURAL DETAILING OF FILTER FEED TANK**

Rev

**00**

DRAWING NO **RAM-KWA-STP-S-006**

Drawn By **VYSHAK P.T**

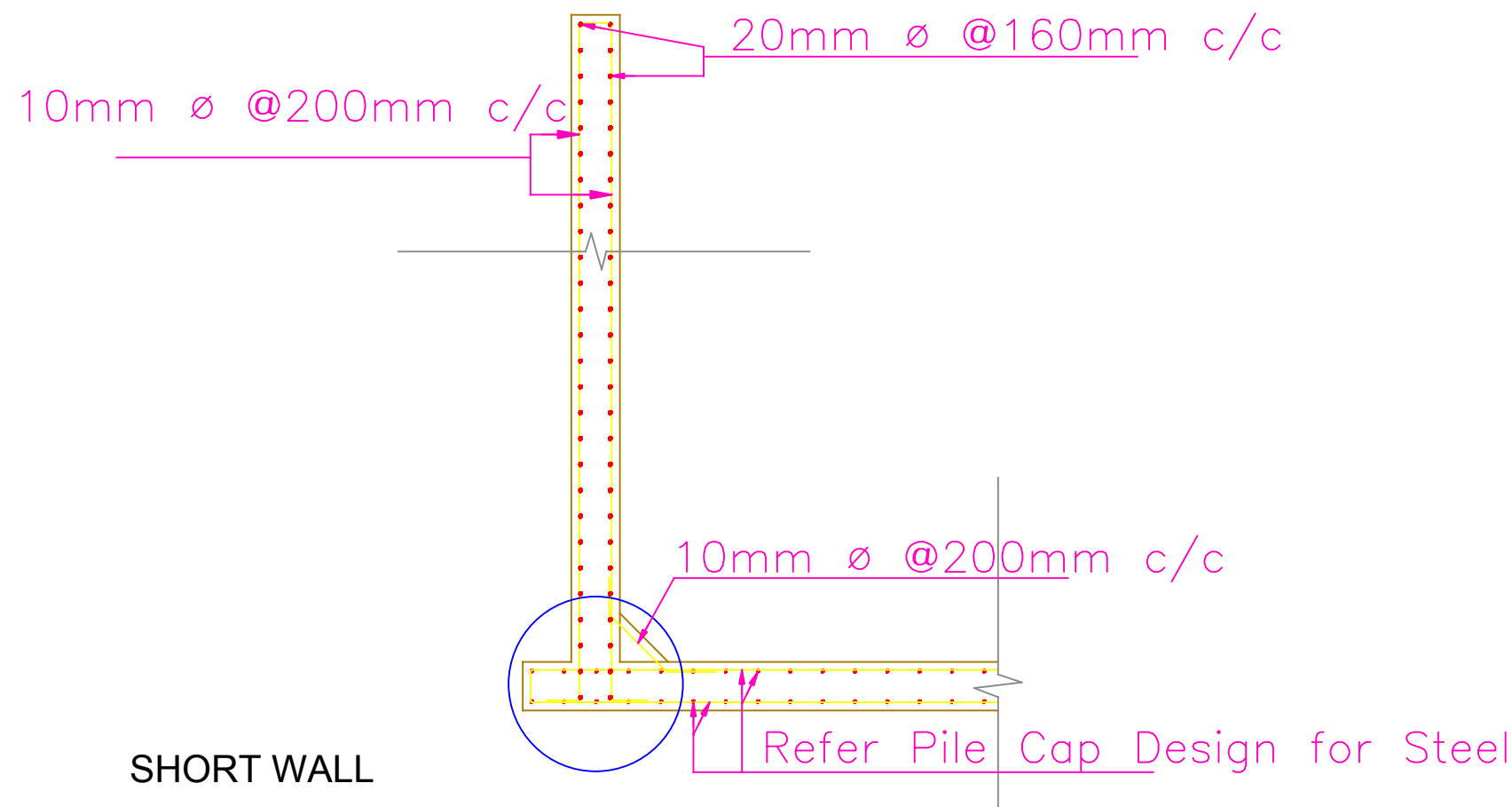
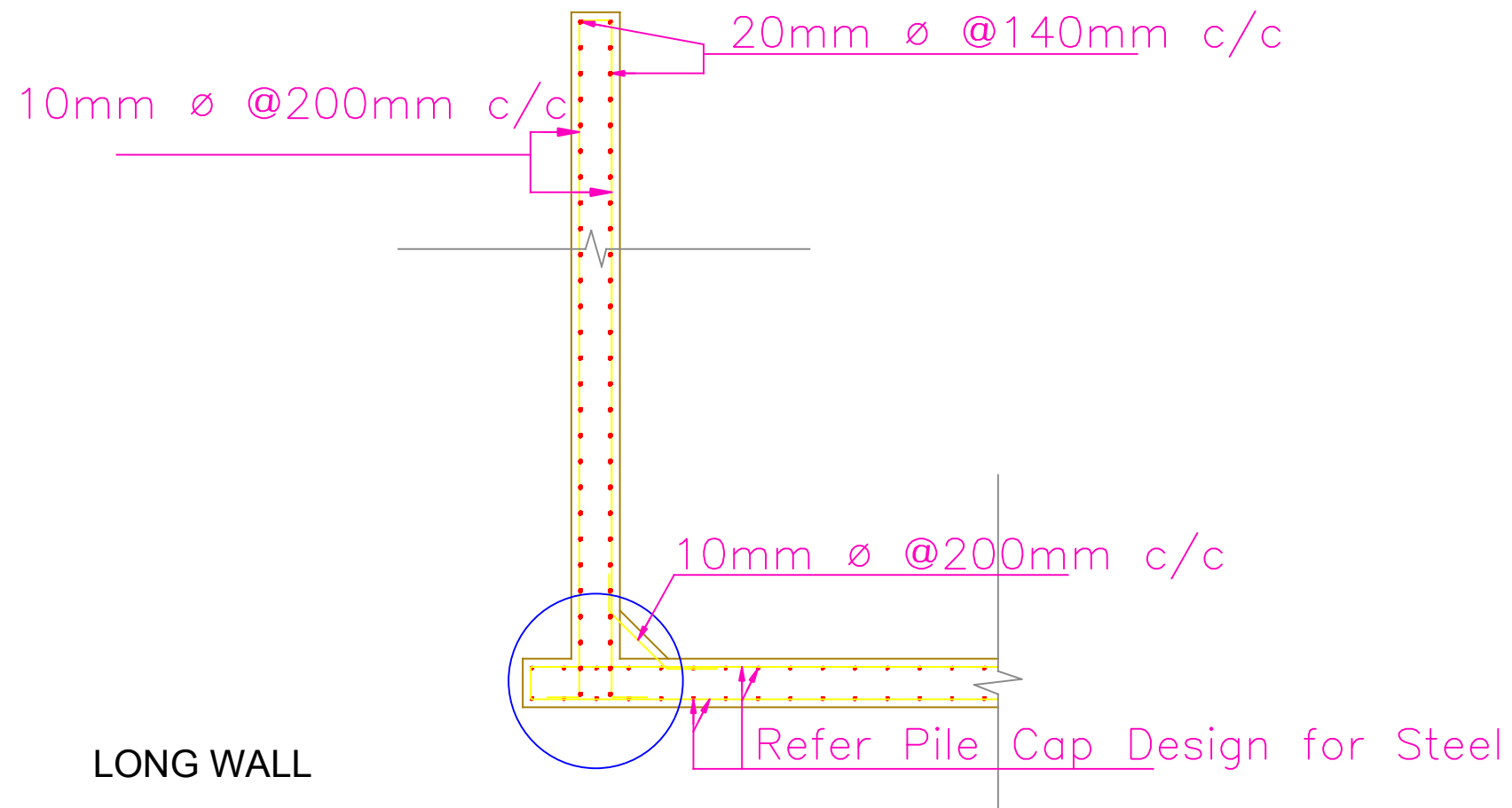
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Checked By **SOORAJ M**

Sheet No **A-3**

Date **05-01-2018**

Scale **NTS**



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**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE **STRUCTURAL DETAILING OF TREATED WATER TANK**

Rev

**00**

DRAWING NO **RAM-KWA-STP-S-007**

Drawn By **VYSHAK P.T**

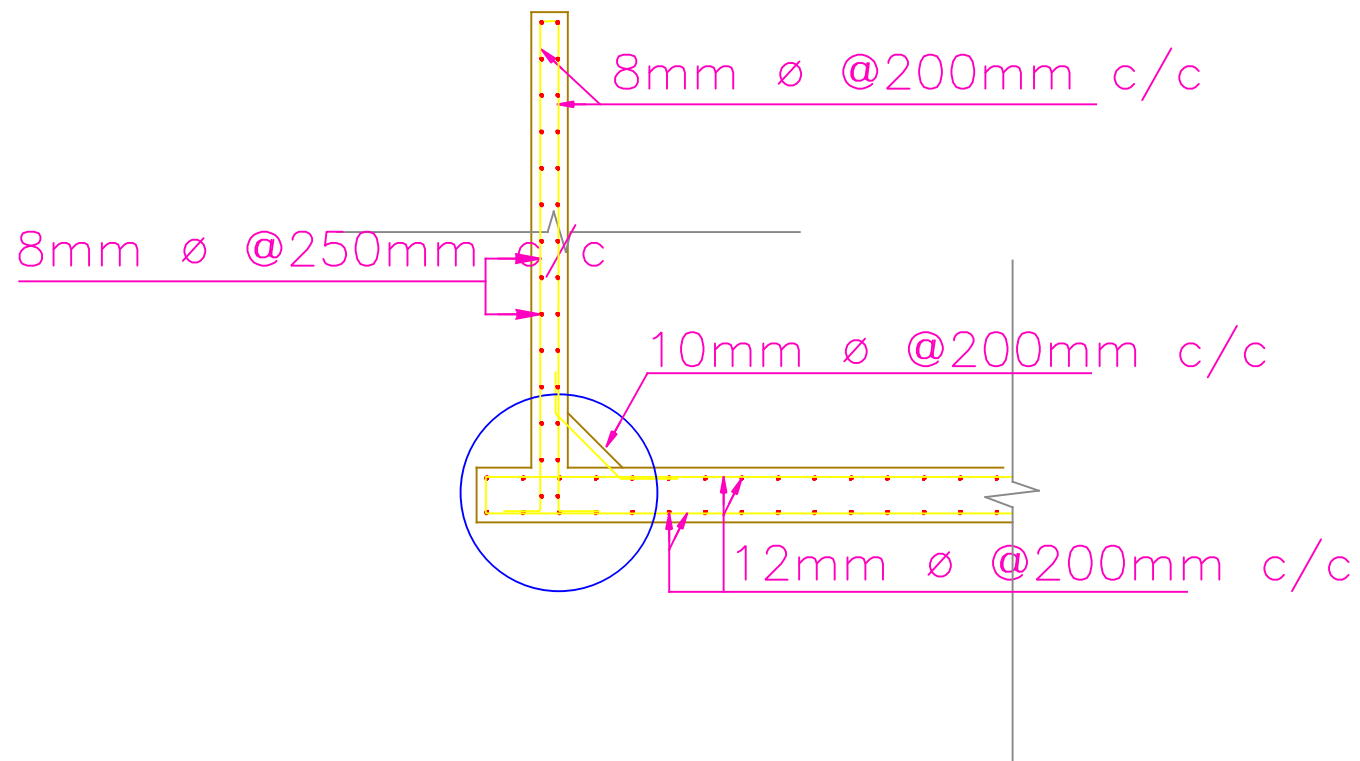
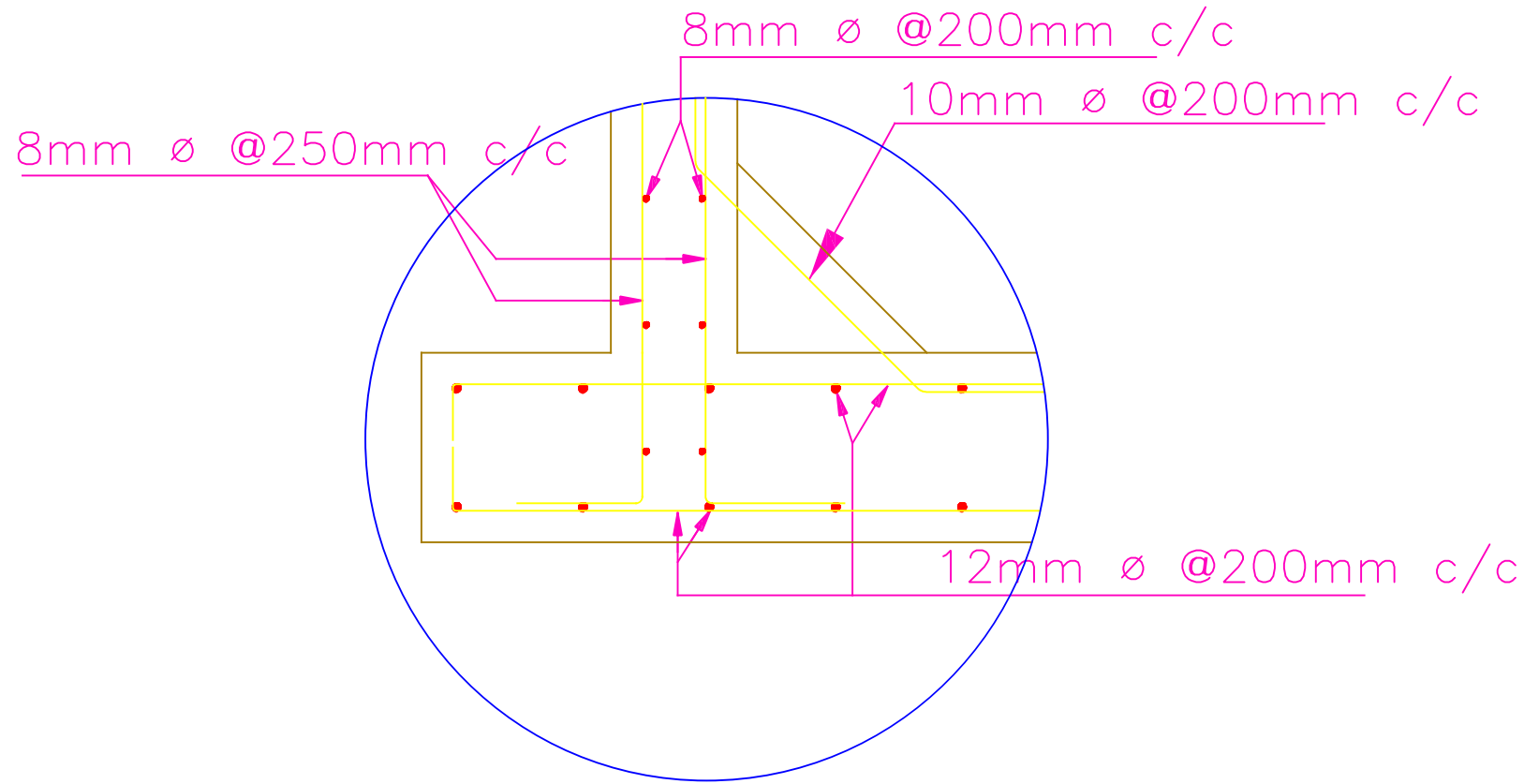
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Checked By **SOORAJ M**

Sheet No **A-3**

Date **05-01-2018**

Scale **NTS**



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**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**STRUCTURAL DETAILING OF  
CENTRATE SUMP**

Rev

**00**

DRAWING NO

**RAM-KWA-STP-S-008**

Drawn By

**VYSHAK P.T**

Sheet No

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Checked By

**SOORAJ M**

Sheet No

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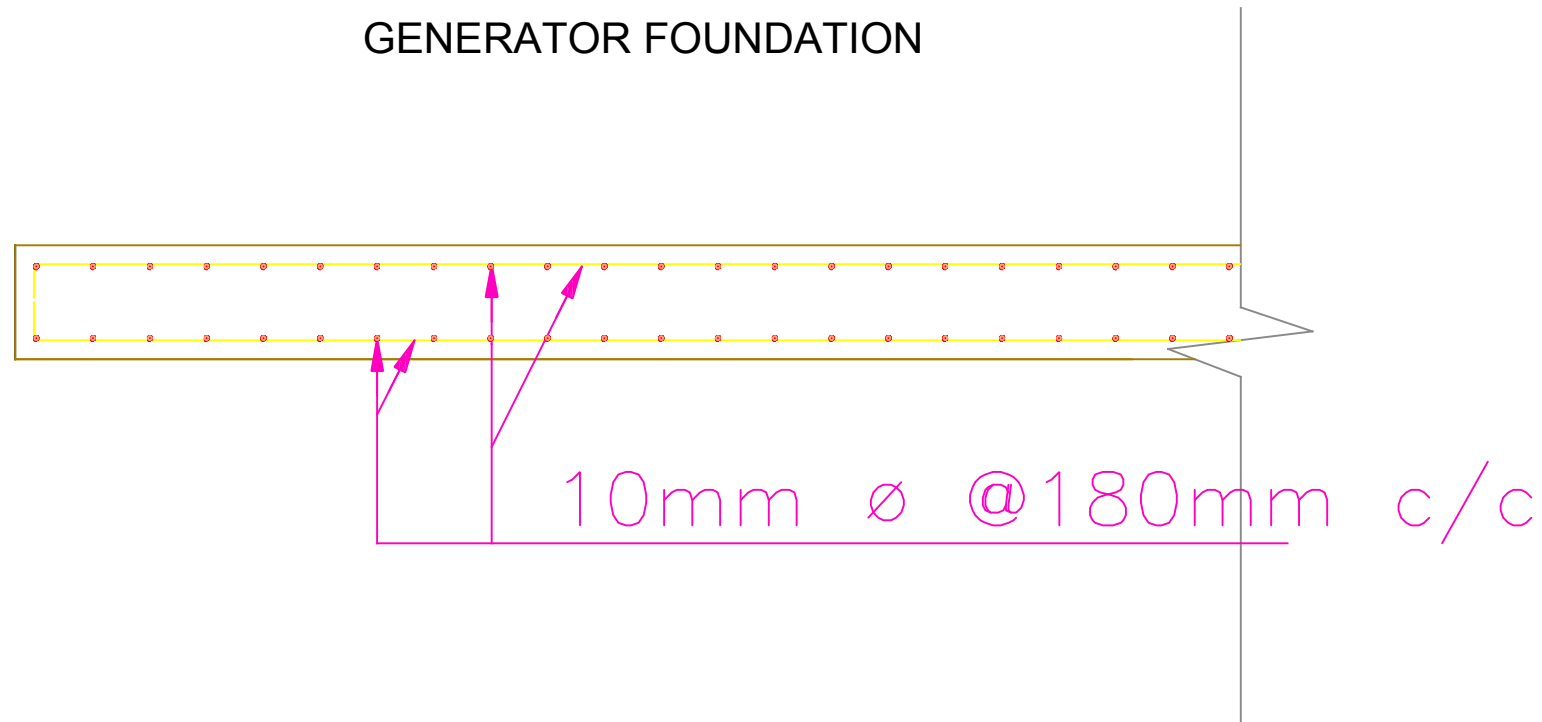
Date

**05-01-2018**

Scale

**NTS**

### GENERATOR FOUNDATION



#### NOTES

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**FOR ESTIMATION PURPOSE ONLY**

#### PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

#### CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

#### CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

#### DRAWING TITLE

**STRUCTURAL DETAILING OF GENERATOR FOUNDATION**

#### DRAWING NO

**RAM-KWA-STP-S-009**

#### Rev

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#### Drawn By

**VYSHAK P.T**

#### Sheet No

**01**

#### Checked By

**SOORAJ M**

#### Sheet No

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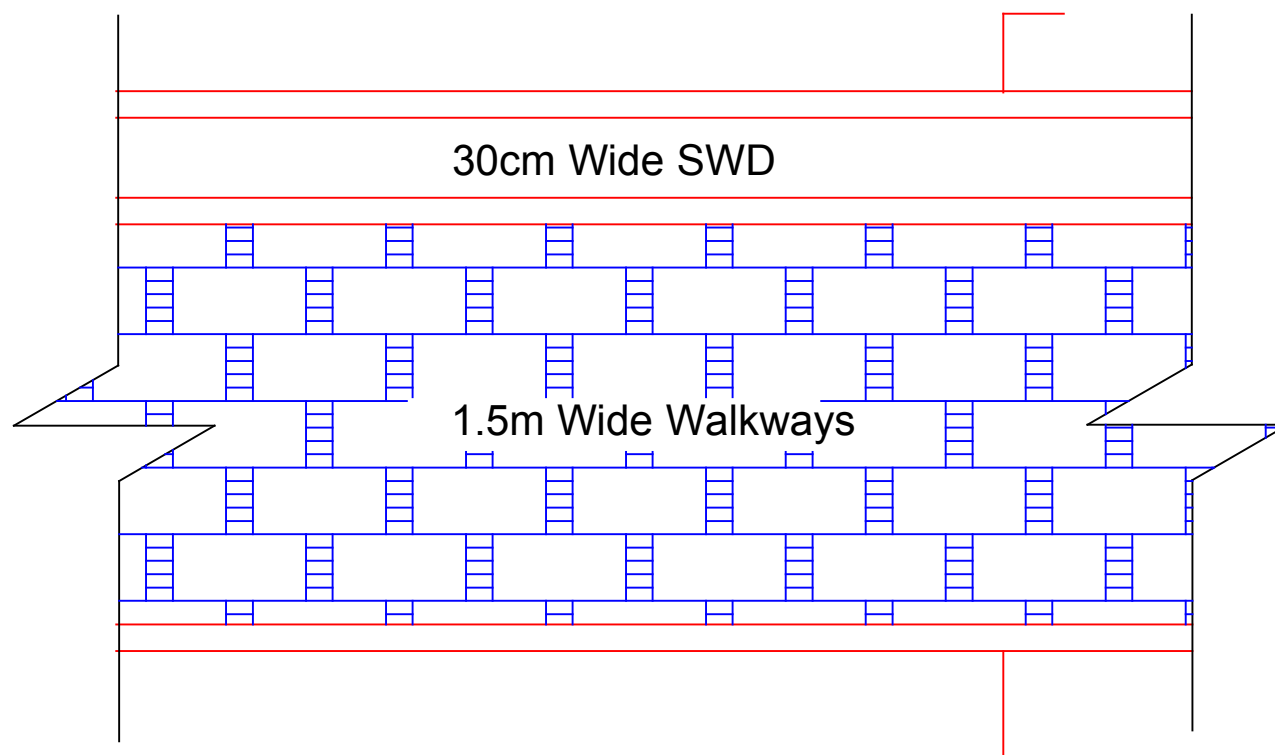
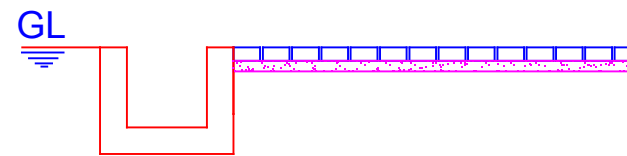
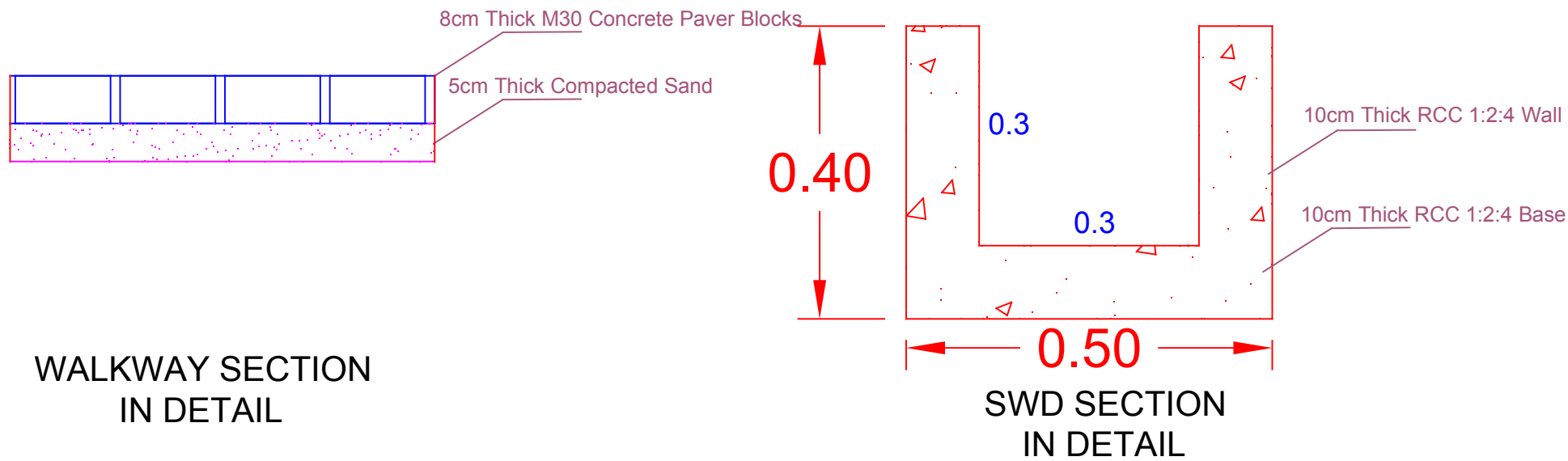
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#### Scale

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All Dimensions are in Mtrs



NOTES

FOR ESTIMATION PURPOSE ONLY

PROJECT TITLE

CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI

CLIENT



KERALA WATER AUTHORITY  
KOCHI

CONSULTANT



RAM BIOLOGICALS  
CALICUT

DRAWING TITLE  
STRUCTURAL DETAILING OF INTERNAL ROADS,  
WALK WAYS AND STORM WATER DRAINS

Rev

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RAM-KWA-STP-S-010

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VYSHAK P.T

Sheet No

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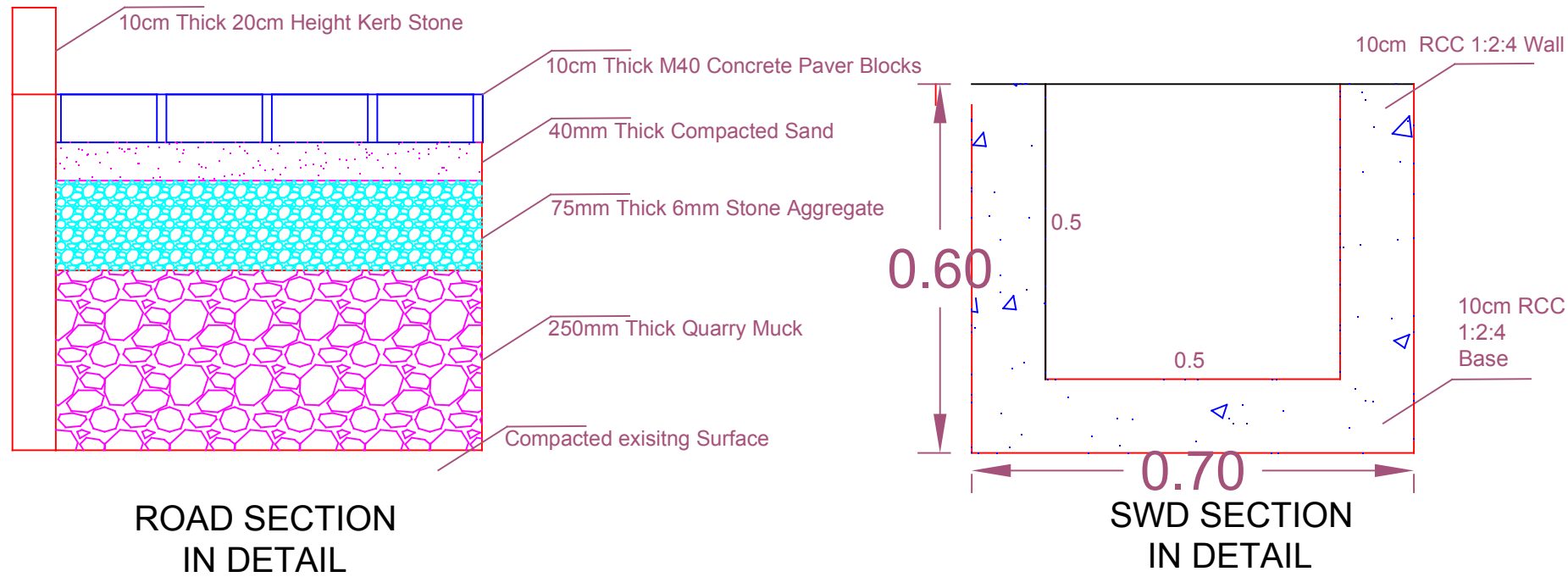
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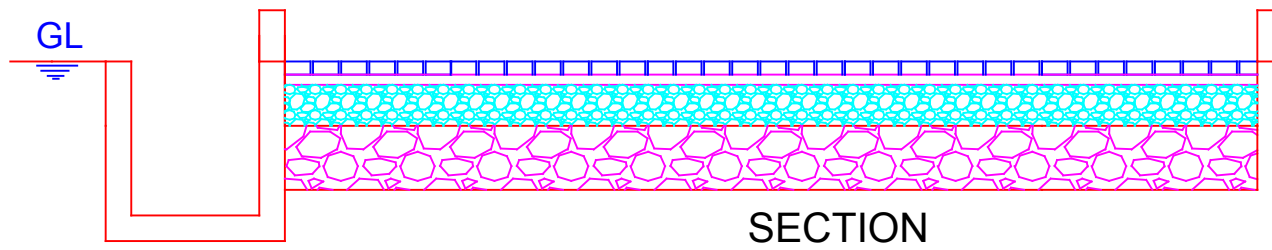
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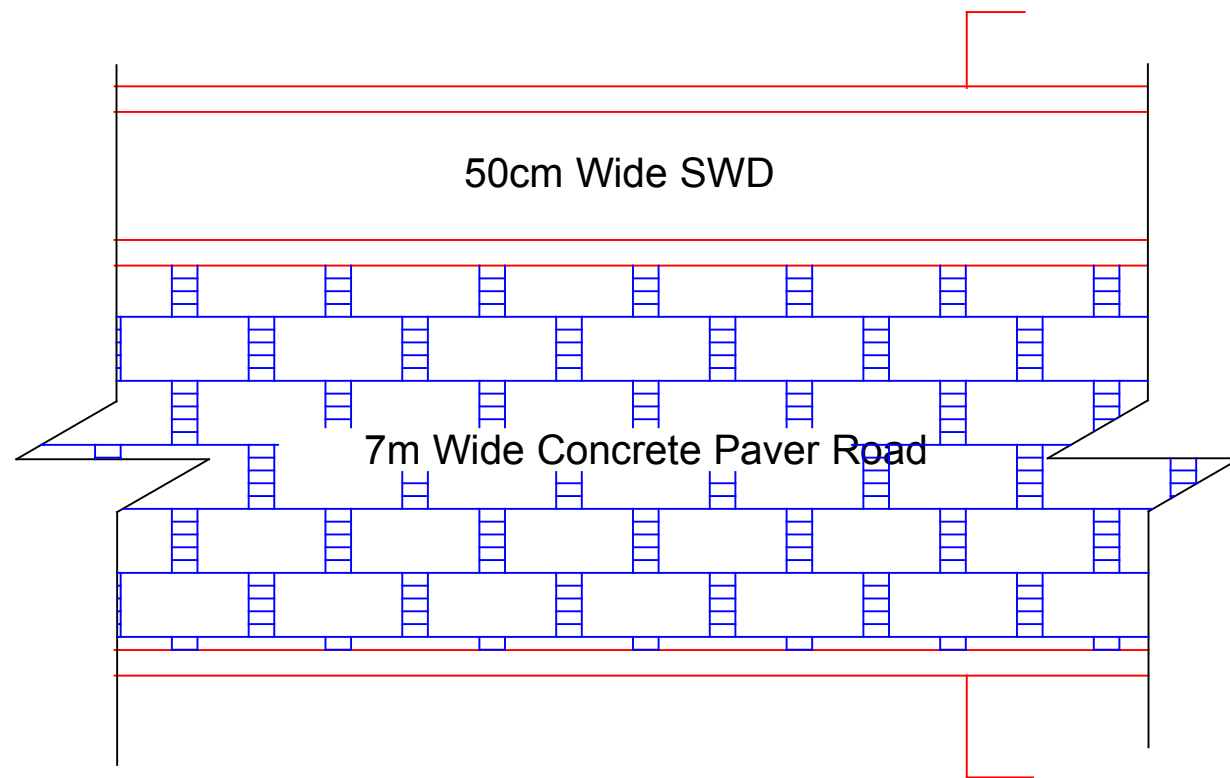


ROAD SECTION  
IN DETAIL

SWD SECTION  
IN DETAIL



SECTION



PLAN

NOTES

**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE  
TREATMENT PLANT AT  
ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**STRUCTURAL DETAILING OF INTERNAL ROADS,  
WALK WAYS AND STORM WATER DRAINS**

DRAWING NO

**RAM-KWA-STP-S-010**

Rev

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Drawn By

**VYSHAK P.T**

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**SOORAJ M**

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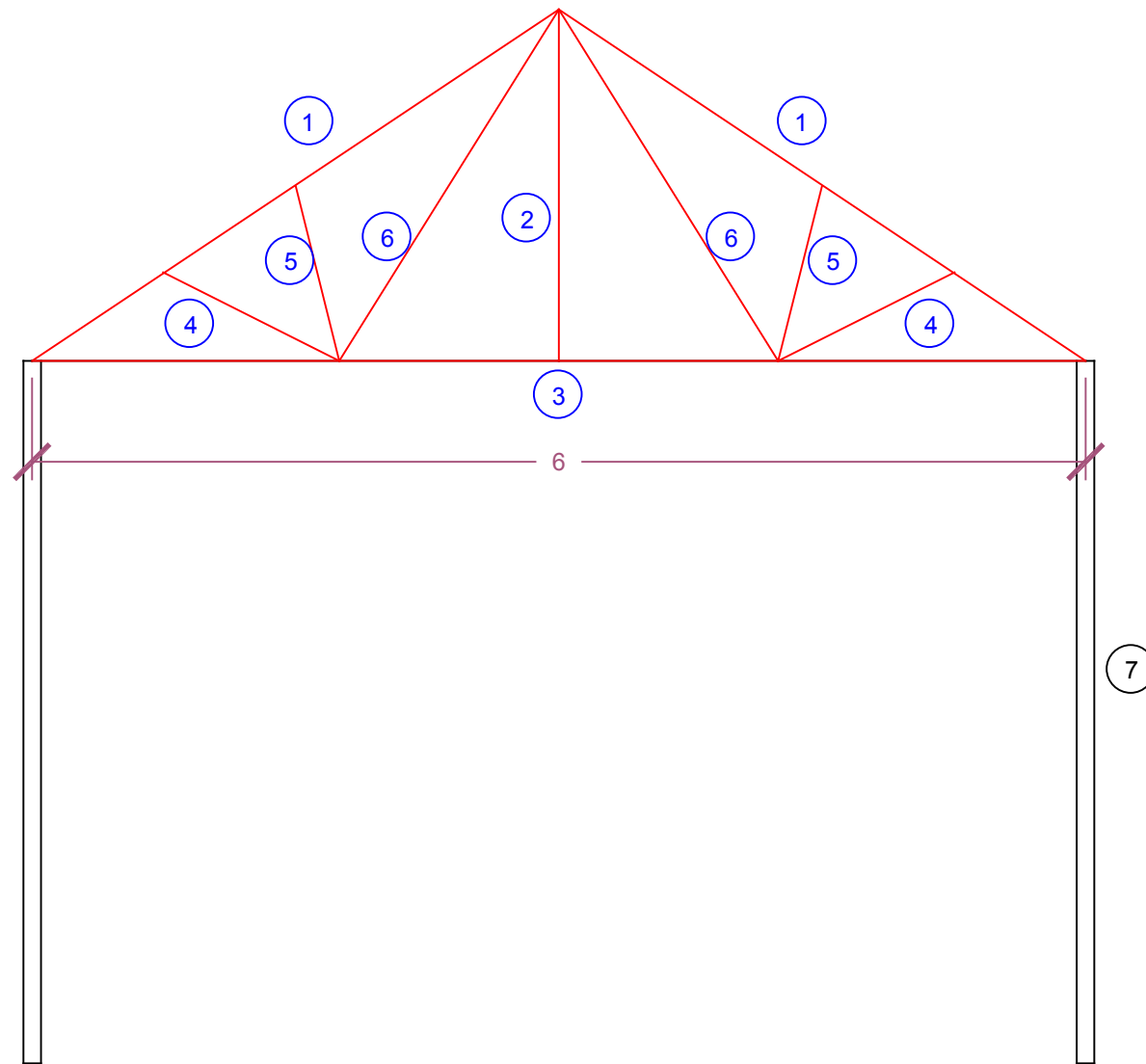
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**05-01-2018**

Scale

**NTS**





**TRUSS - 6m SPAN**

**MEMBERS**

- ① Length:3.61,50mm, GI Pipe,4.08kg/m
- ② Length:2m,50mm, GI Pipe,4.08kg/m
- ③ Length:6m,65mm, GI Pipe,5.71kg/m
- ④ Length:1m.25mm, GI Pipe,1.98kg/m
- ⑤ Length:1.74m, 40mm, GI Pipe, 3.23kg/m
- ⑥ Length:2.5m,40mm, GI Pipe, 3.23kg/m
- ⑦ Length:4.0,100mm, GI Pipe,12.2kg/m

**NOTES**

**PROJECT TITLE**

**CONSTRUCTION OF 5MLD SEWAGE  
TREATMENT PLANT AT  
ELAMKULAM, KOCHI**

**CLIENT**



**KERALA WATER AUTHORITY  
KOCHI**

**CONSULTANT**



**RAM BIOLOGICALS  
CALICUT**

**DRAWING TITLE**

**STRUCTURAL DETAILING OF ROOF TRUSS  
SLUDGE STORAGE YARD**

**Rev**

**00**

**DRAWING NO**

**RAM-KWA-STP-S-011**

**Drawn By**

**VYSHAK P.T**

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**Checked By**

**SOORAJ M**

**Sheet No**

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**Date**

**05-01-2018**

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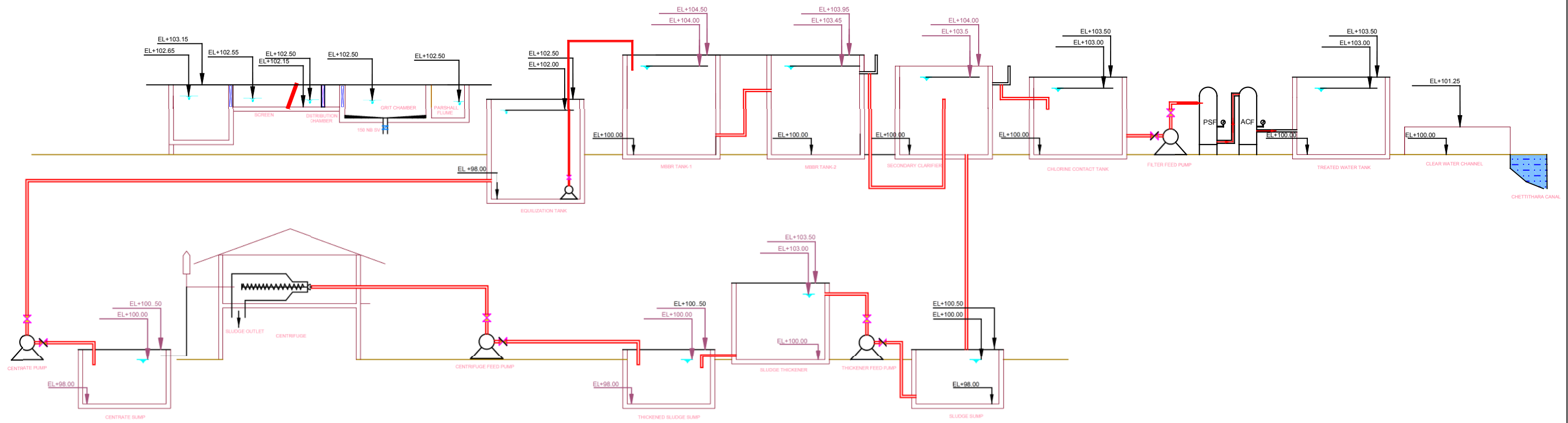
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# **MECHANICAL DRAWINGS**

# HYDRAULIC DIAGRAM

PROJECT TITLE

CONSTRUCTION OF 5MLD SEWAGE  
TREATMENT PLANT AT  
ELAMKULAM, KOCHI



NOTES

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

HYDRAULIC DIAGRAM

Rev

00

DRAWING NO

RAM-KWA-STP-M-001

Drawn By

VYSHAK P.T

Sheet No

01

Checked By

SOORAJ M

Sheet No

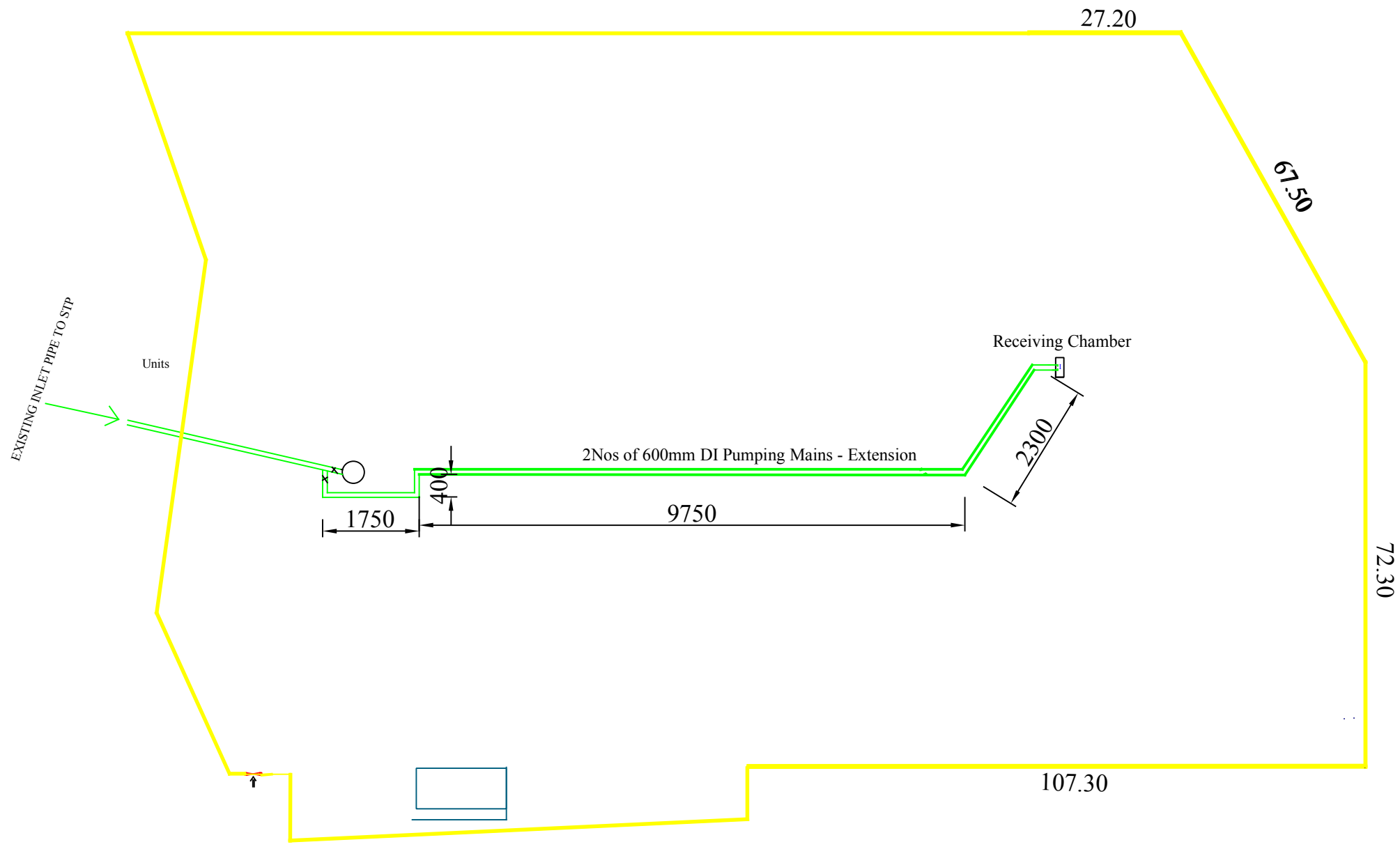
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Date

05-01-2018

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NTS




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**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**


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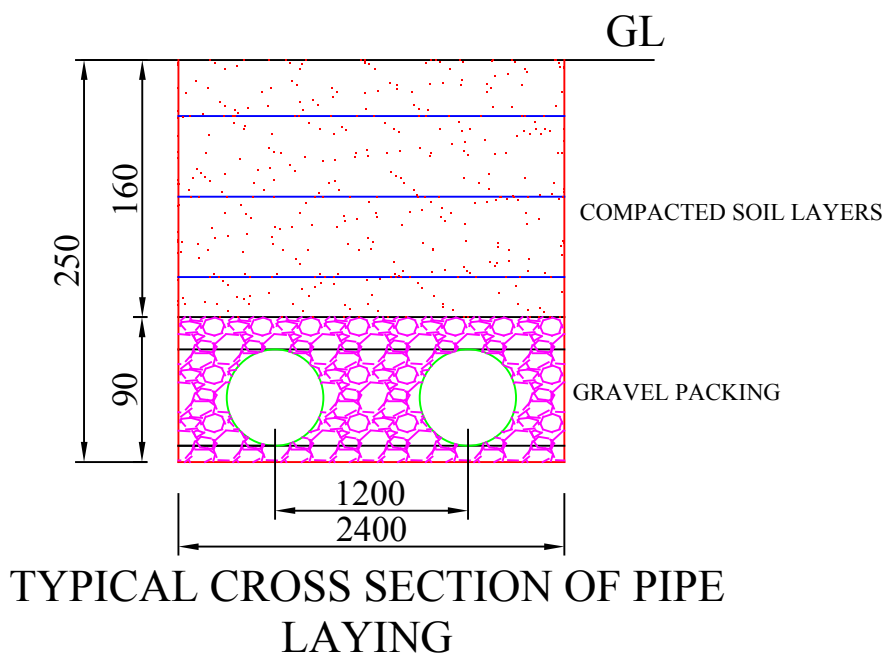
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**RAM BIOLOGICALS  
CALICUT**

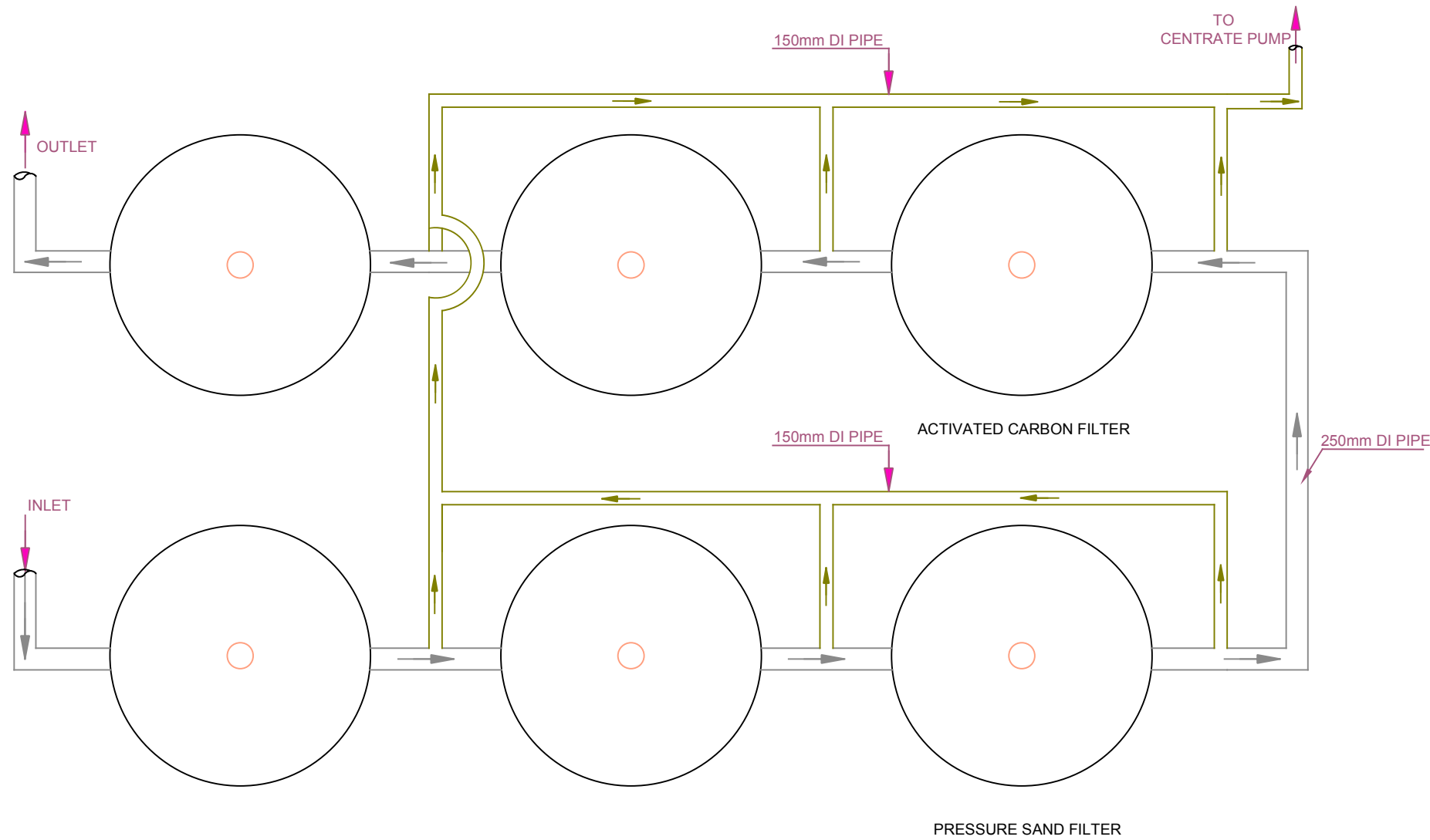
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EXTENSION OF 2NOS OF DI 600 PUMPING MAINS PIPING LAYOUT	
DRAWING NO	
RAM-KWA-STP-M-002	

Drawn By	VYSHAK P.T	Sheet No	01
Checked By	SOORAJ M	Sheet No	A-3
Date	05-01-2018	Scale	NTS



LENGTH OF PIPE LINE : 130mtrs

TYPICAL CROSS SECTION OF PIPE LAYING





PIPING LAYOUT

All Dimensions are in Mtrs

NOTES

PROJECT TITLE  
**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

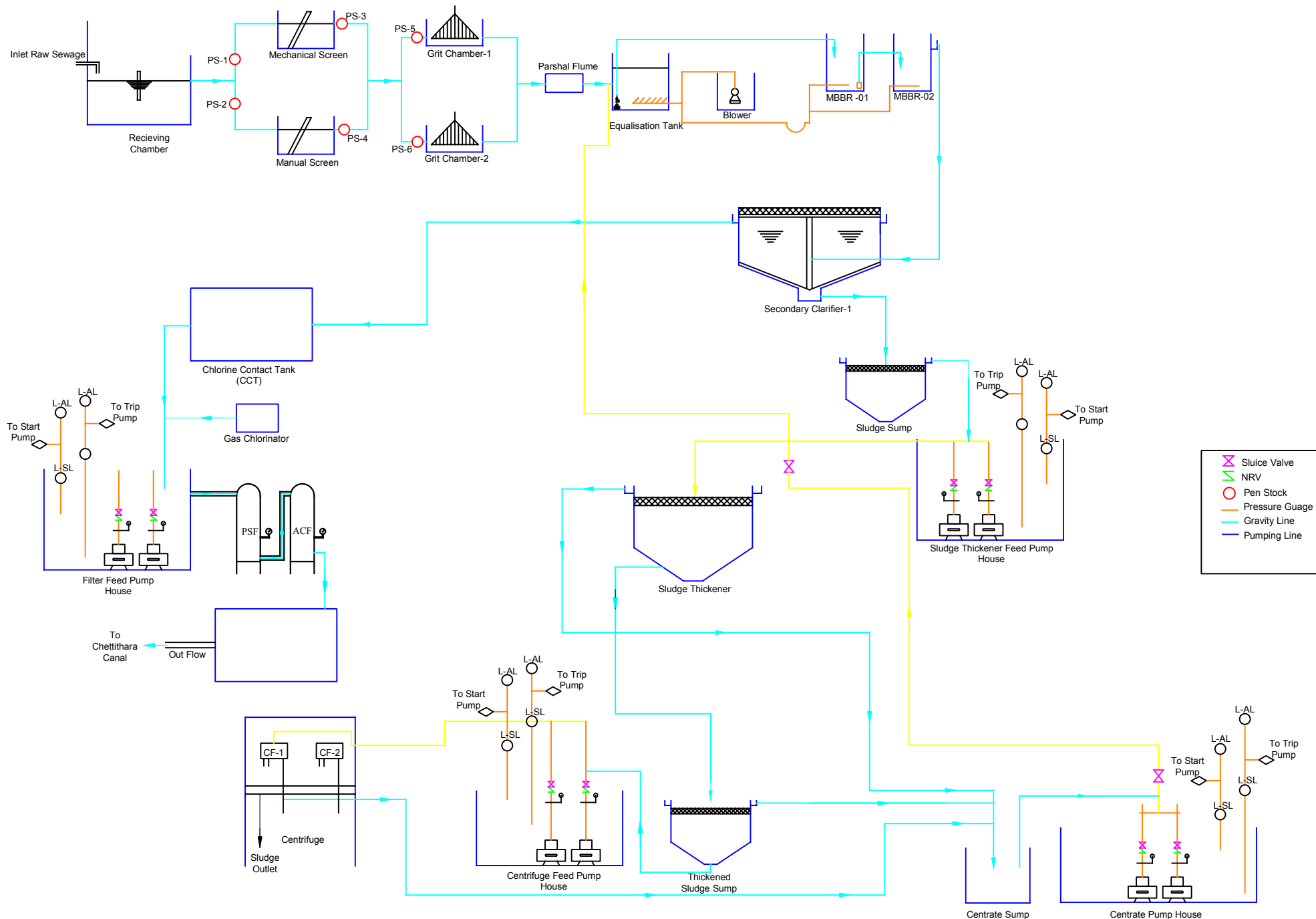
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 **KERALA WATER AUTHORITY KOCHI**

CONSULTANT  
 **RAM BIOLOGICALS CALICUT**

DRAWING TITLE GENERAL PIPING LAYOUT FILTERS	Rev <b>00</b>
DRAWING NO RAM-KWA-STP-M-003	

Drawn By VYSHAK P.T	Sheet No 01
Checked By SOORAJ M	Sheet No A-3
Date 05-01-2018	Scale NTS

# PROCESS AND INSTRUMENTATION LAYOUT (P&I LAYOUT)



NOTES

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**PROCESS AND INSTRUMENTATION LAYOUT  
(P&I LAYOUT)**

Rev

**00**

DRAWING NO

**RAM-KWA-STP-M-005**

Drawn By

**VYSHAK P.T**

Sheet No  
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Checked By

**SOORAJ M**

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A-3

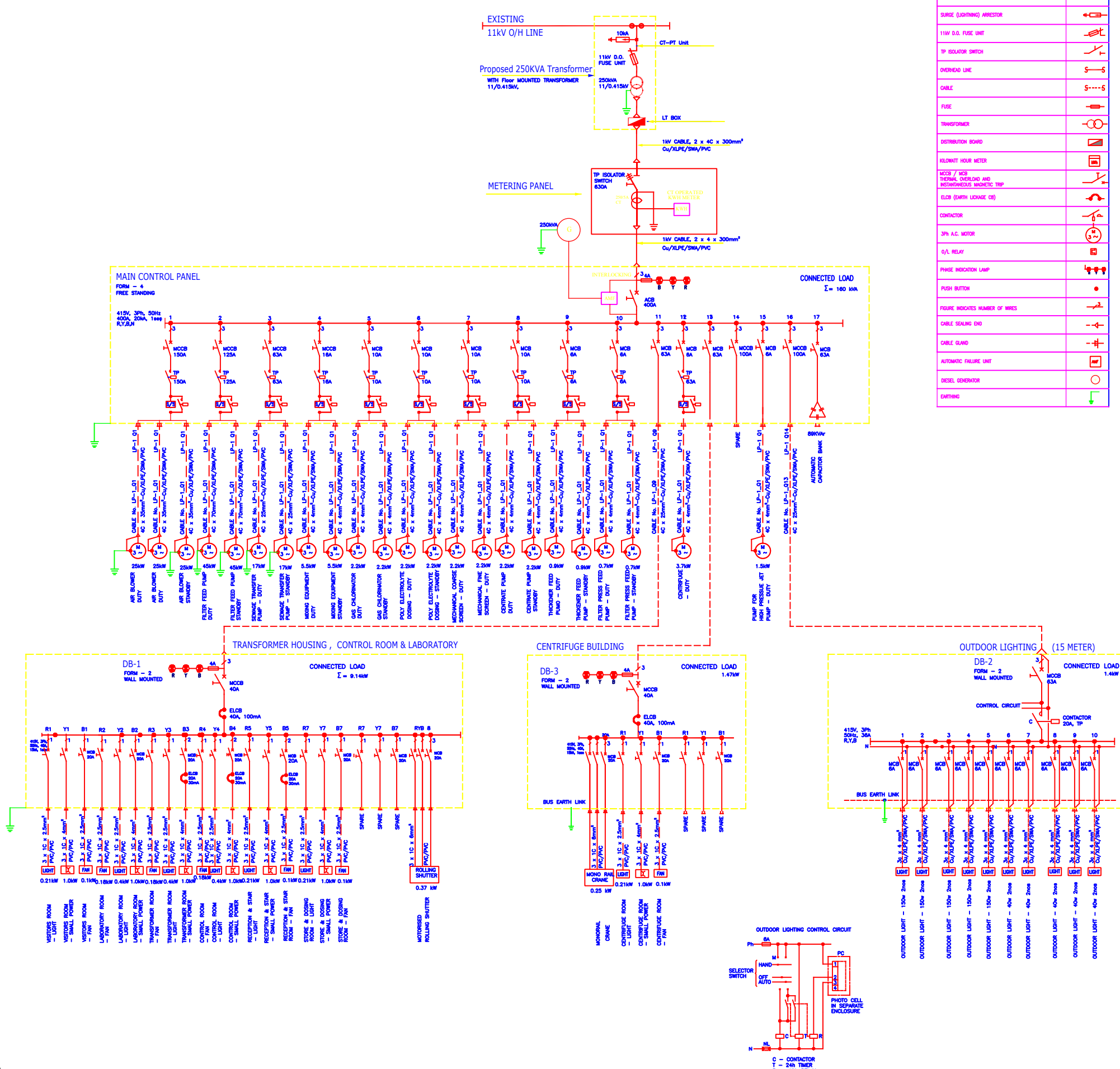
Date

**05-01-2018**

Scale

**NTS**

# **ELECTRICAL DRAWINGS**



NOTES


- THE LINE DIAGRAM IS PREPARED BASED ON THE OVERALL REQUIREMENT OF THE PLANT
- CONTRACTOR SHALL PREPARE THE DETAILED DESIGN FOR EACH ITEM SEPERATE
- ALL THE WIRES MENTIONED IN THIS DRAWING IS BASED ON THE RELEVANT IEC
- THIS DRAWING IS PREPARED SOLELY FOR THE PREPARATION OF THE DETAILED ESTIMATE AND BOQ FOR THE ELECTRICAL ITEMS.

**FOR ESTIMATION PURPOSE ONLY**

PROJECT TITLE


**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI**

CLIENT



**KERALA WATER AUTHORITY  
KOCHI**

CONSULTANT



**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**SINGLE LINE DIAGRAM-POWER DISTRIBUTION**

DRAWING NO

**RAM-KWA-STP-E-001**

Rev

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Drawn By

**VYSHAK P.T**

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**SOORAJ M**

Sheet No

**A-3**

Date

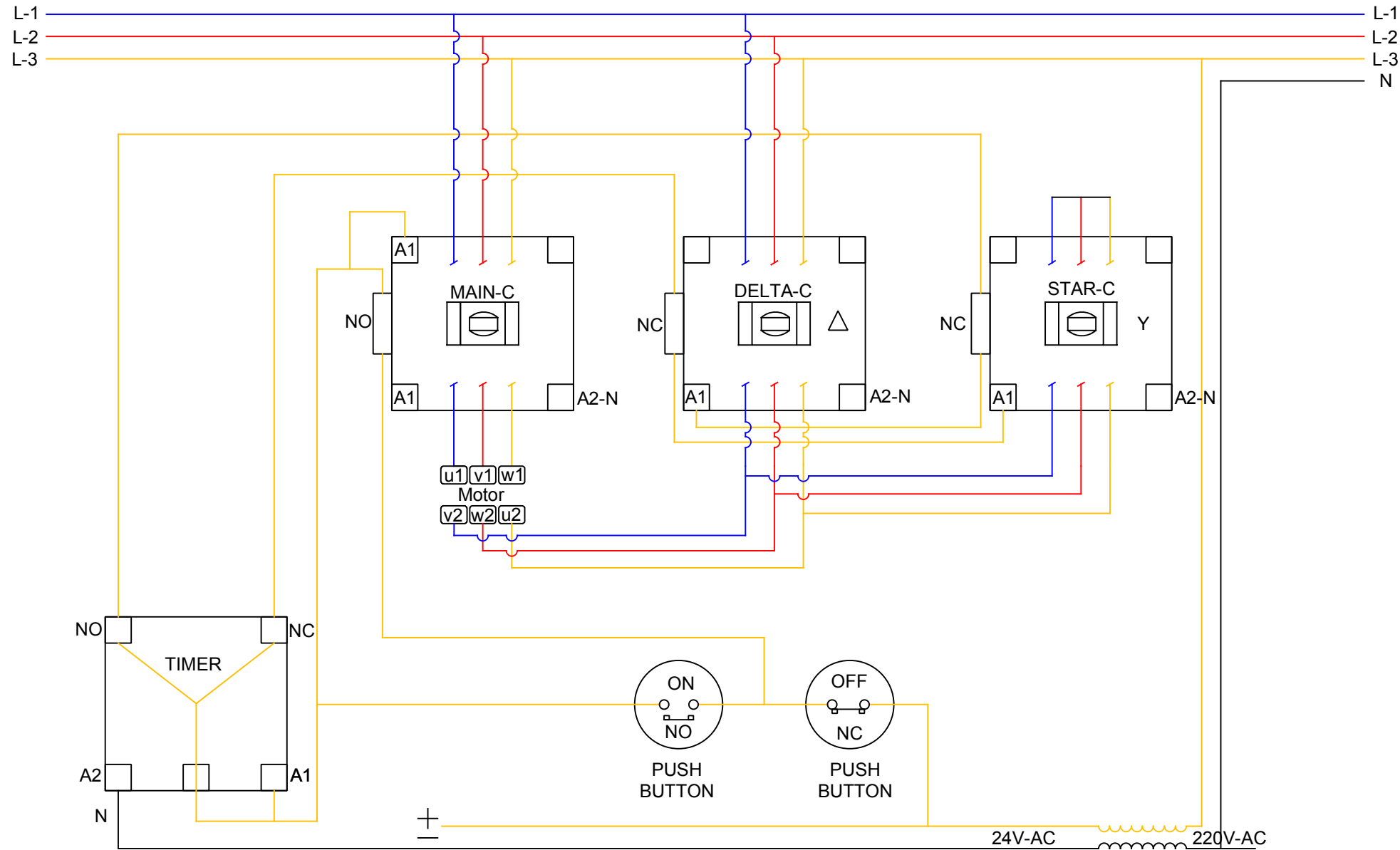
**05-01-2018**

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**NTS**



# STAR DELTA WIRING DIAGRAM



NOTES

PROJECT TITLE

**CONSTRUCTION OF 5MLD SEWAGE  
TREATMENT PLANT AT  
ELAMKULAM, KOCHI**

CLIENT



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**RAM BIOLOGICALS  
CALICUT**

DRAWING TITLE

**GENERAL ARRANGEMENT OF  
STAR-DELTA CONNECTION - TYPICAL**

DRAWING NO

**RAM-KWA-STP-E-002**

Rev

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**01**

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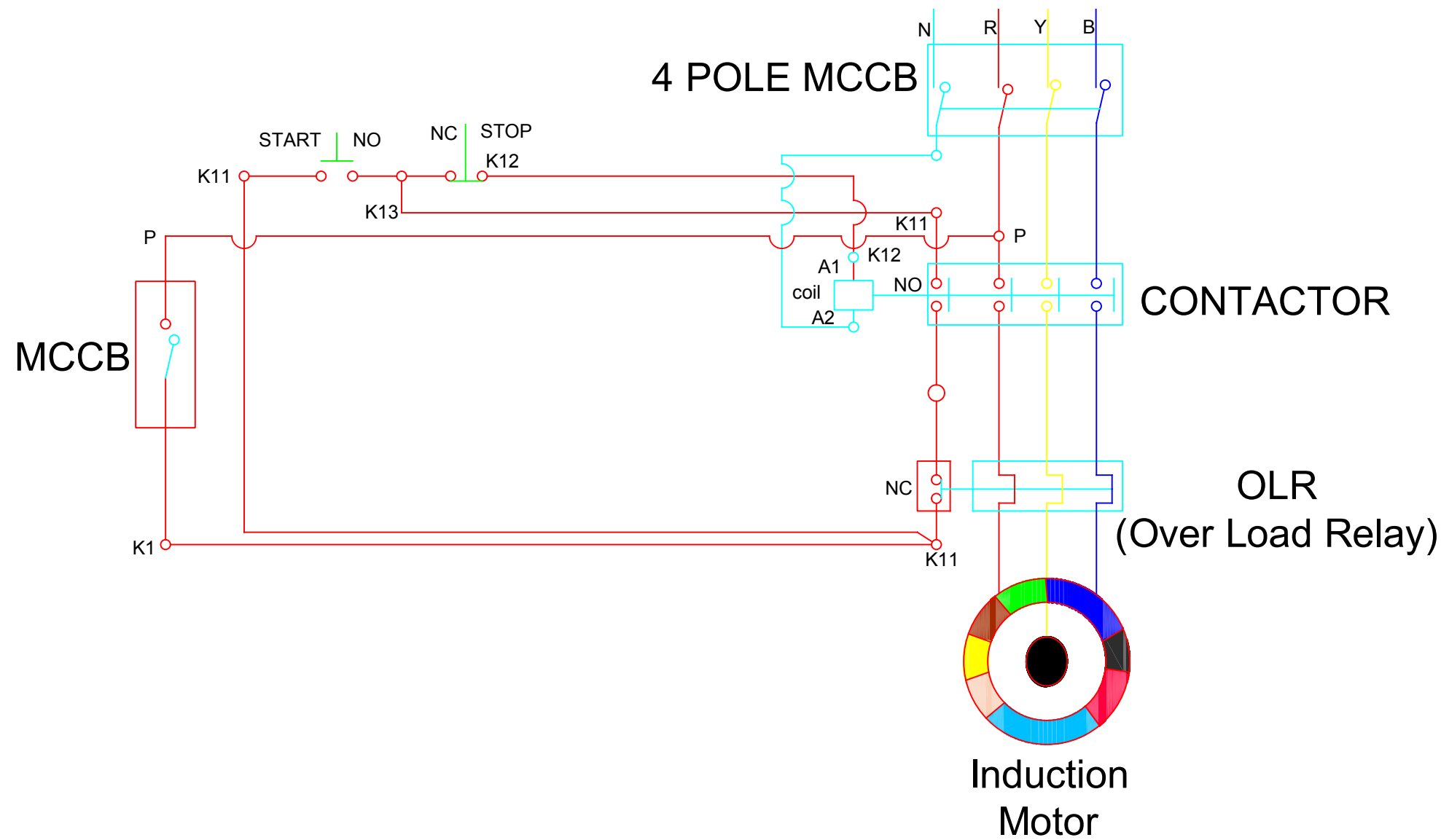
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**A-3**

Date

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# THREE PHASE DOL STARTER CONNECTION DIAGRAM



NOTES

PROJECT TITLE

CONSTRUCTION OF 5MLD SEWAGE  
TREATMENT PLANT AT  
ELAMKULAM, KOCHI

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RAM BIOLOGICALS  
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DRAWING TITLE

GENERAL ARRANGEMENT OF  
DOL CONNECTION - TYPICAL

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DRAWING NO

RAM-KWA-STP-E-003

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05-01-2018

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