

N.S. MEMORIAL INSTITUTE OF MEDICAL SCIENCES

PALATHARA, KOLLAM

MOTHER & CHILD BLOCK

ANNEXURE - 2

DRAWINGS & BOQ

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2. MEP
 - a. Electrical
 - b. ELV
 - c. PHE
 - d. Fire
 - e. Air Conditioning
 - f. Medical Gas

ARCHITECTURAL DRAWINGS

PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



SITE PLAN

Architectural drawing

Architectural
Consultant

V.R.Baburaj

CLIENT

CONSULTANTS

ABHILASH ARCHITECTS

Near Art Of Living Ashramam
Thoppilkadavu, Kollam
Kerala, India
Pin- 691012

Tel: No: +914742792144
+914742792134



ABHILASH ARCHITECTS
ART. PRECISION + ETHICS



TYPE
MEDICAL

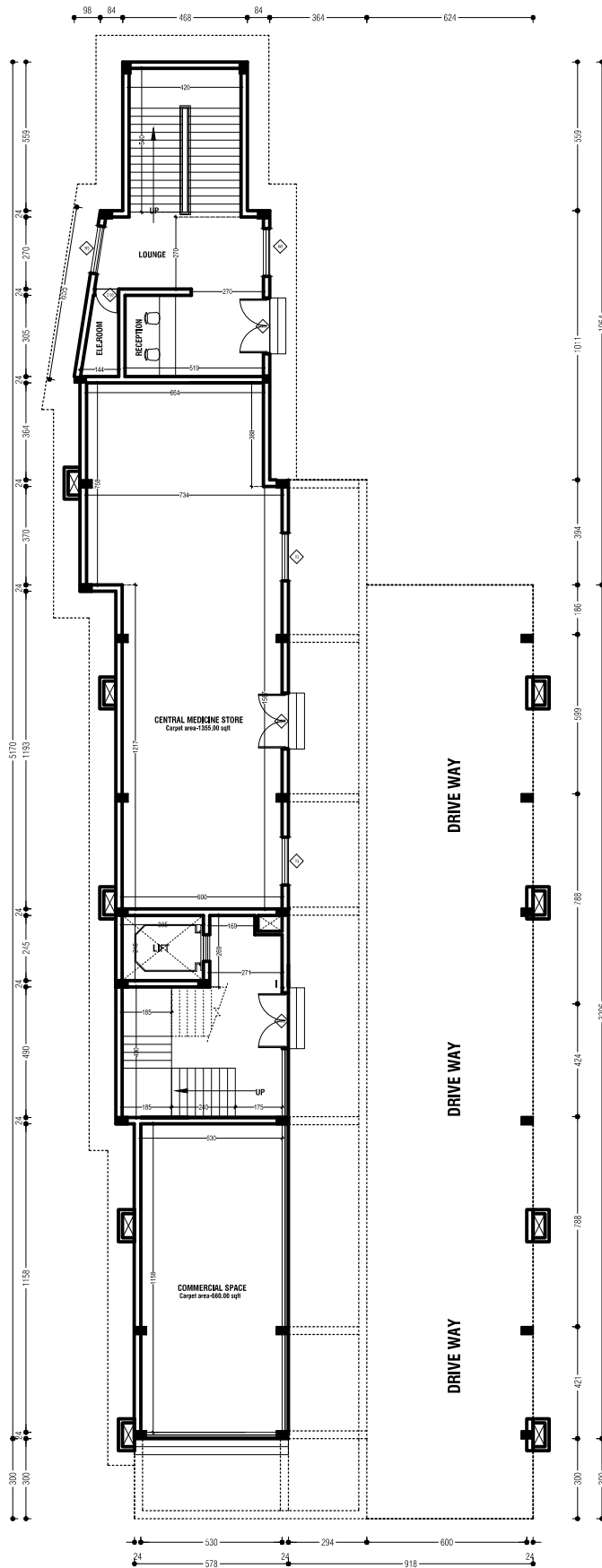
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SCALE: 1 : 100
all dims in centimetres unless specified

PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



GROUND FLOOR PLAN

Plinth Area:- 327.10 sqmt(3520.00 sqft)

TOTAL Area:- 2929.45sqmt(31520.00 sqft)

Architectural drawing

Architectural
Consultant

V.R.Baburaj

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TYPE

MEDICAL

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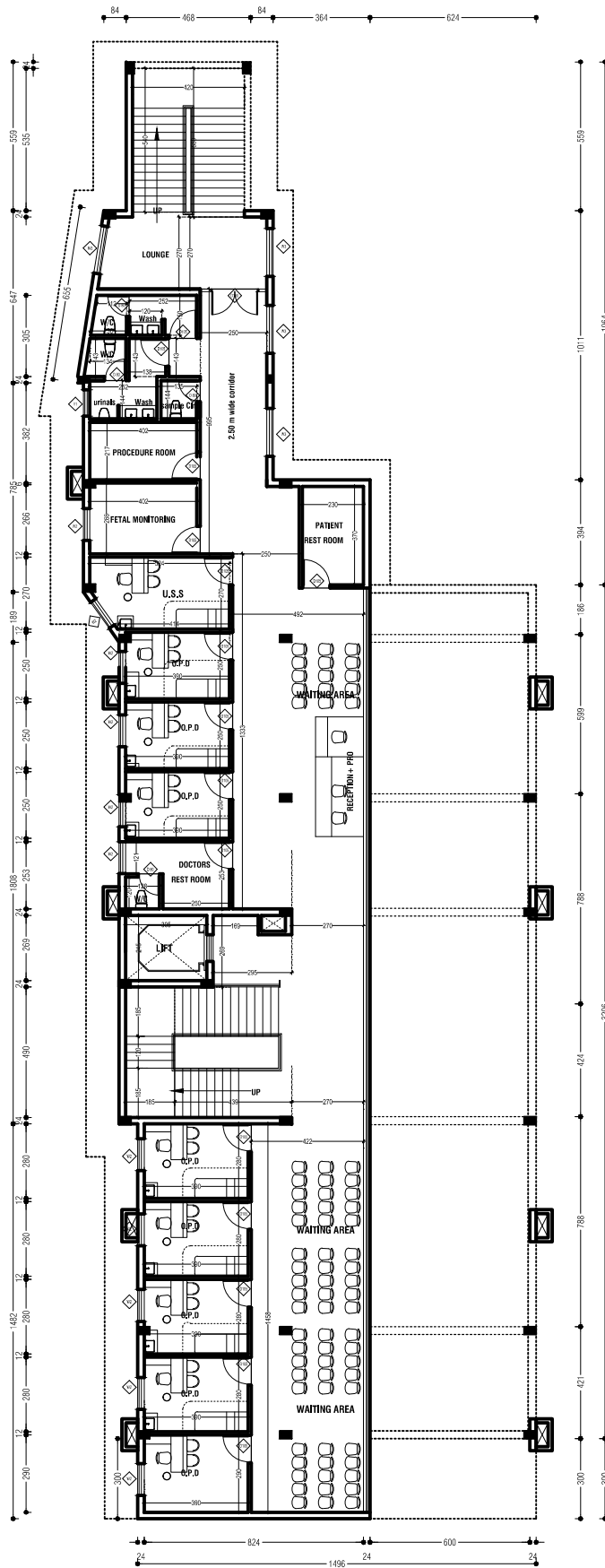
DATE

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PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



FIRST FLOOR PLAN

Plinth Area:- 459.10 sqmt(4940.00 sqft)

Architectural drawing

Architectural
Consultant

V.R.Baburaj

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ABHILASH ARCHITECTS
ART OF PRECISION - ETHICS

1/1

TYPE

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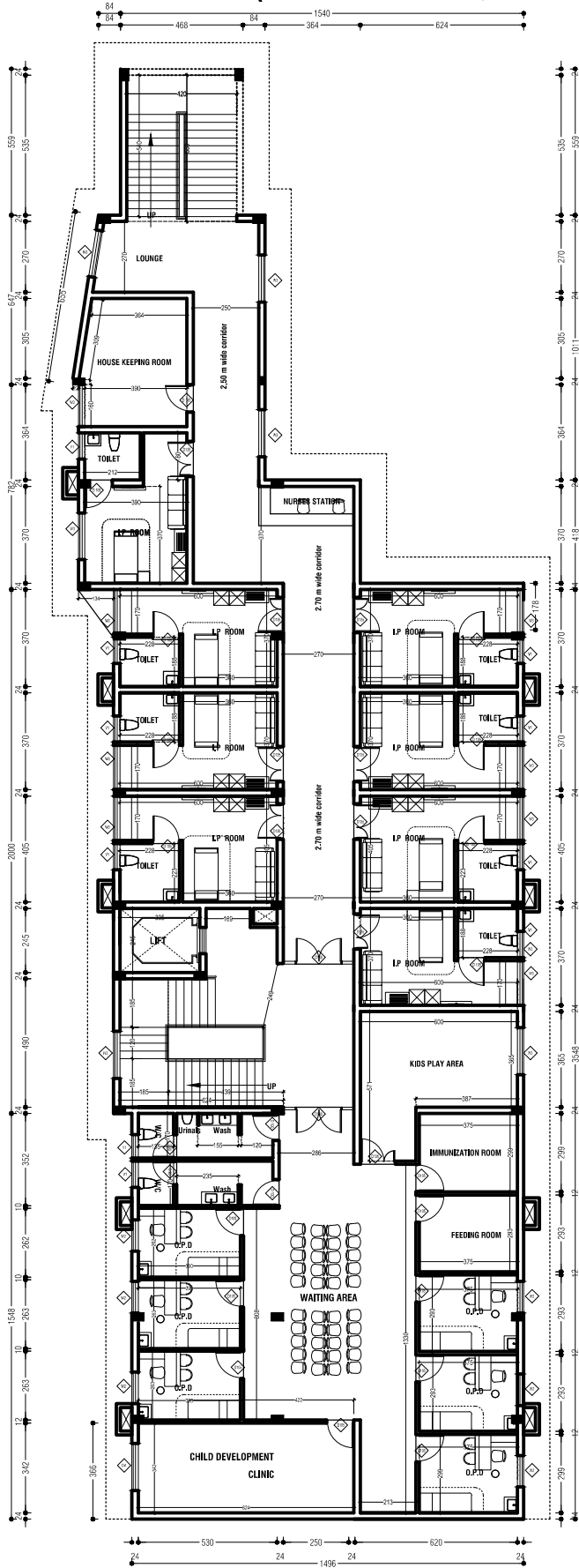
DATE

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PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



Second floor = 08 rooms
Third floor = 16 rooms
Fourth floor = 16 rooms
TOTAL ROOMS- 40 rooms

SECOND FLOOR PLAN
Plinth Area:- 687.75 sqmt(7400.00 sqft)

Architectural drawing

Architectural Consultant
V.R.Baburaj

CLIENT

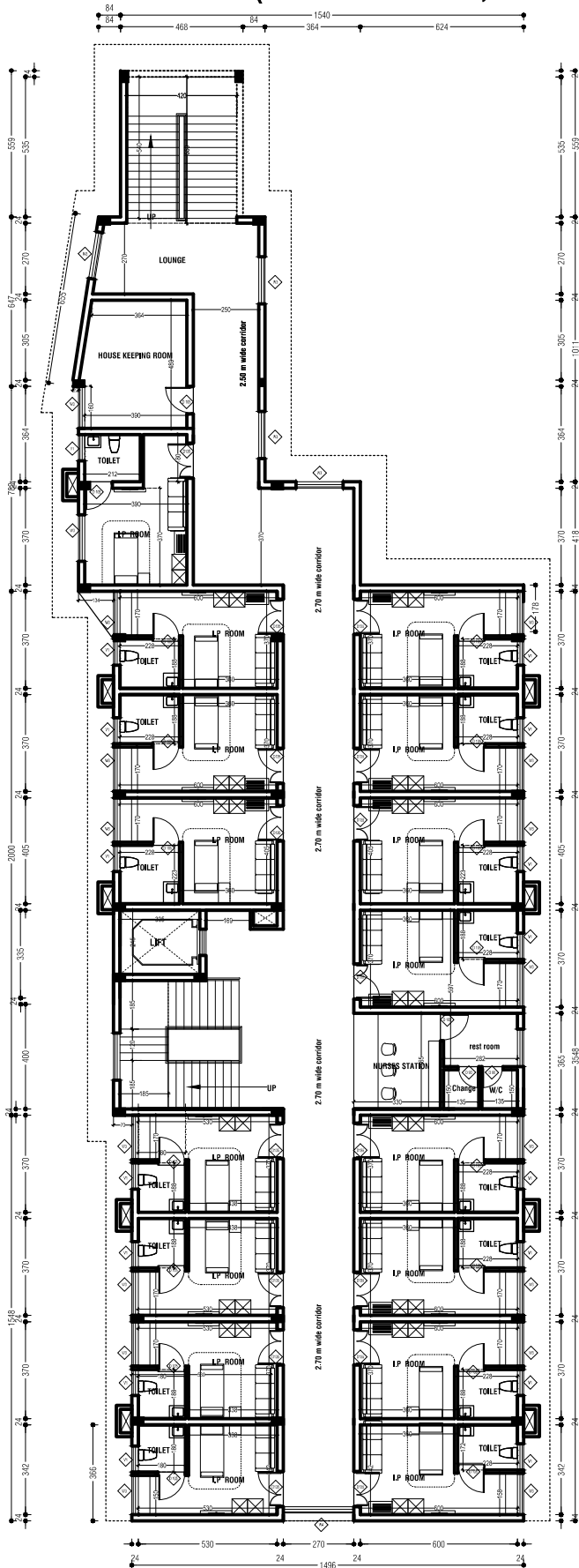
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ABHILASH ARCHITECTS
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PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



Second floor = 08 rooms
Third floor = 16 rooms
Fourth floor = 16 rooms
TOTAL ROOMS- 40 rooms

THIRD & FOURTH FLOOR PLAN
Plinth Area:- 687.75 sqmt(7400.00 sqft)

Architectural drawing

Architectural Consultant
V.R.Baburaj

CLIENT

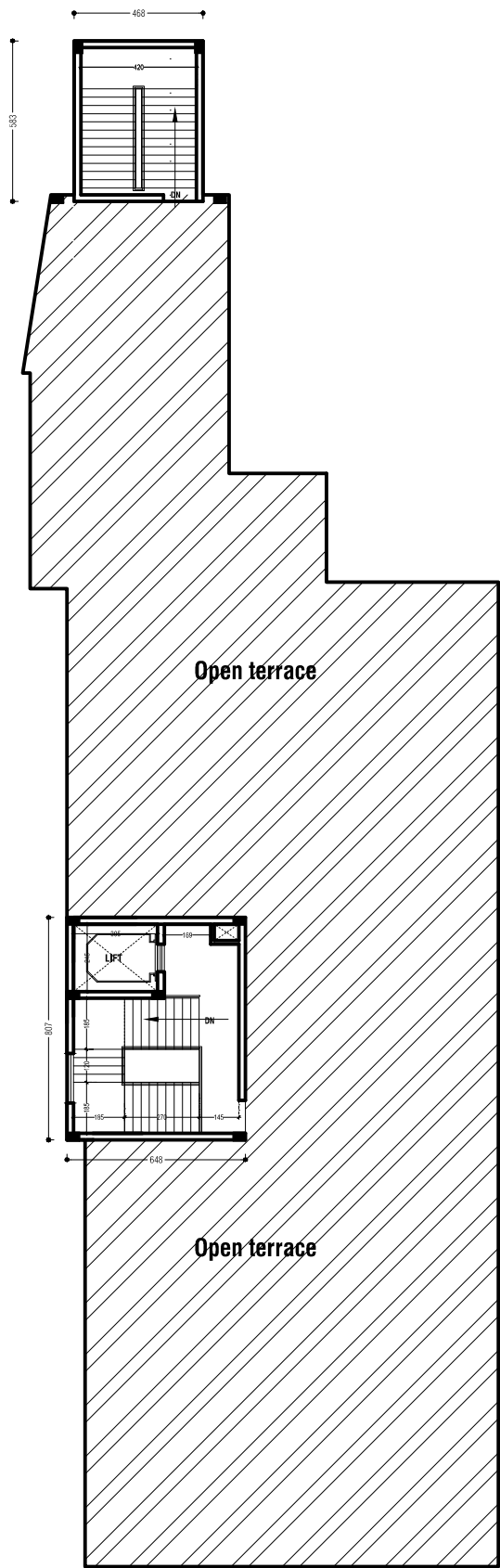
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PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



TERRACE FLOOR PLAN
Plinth Area:- 80.00 sqmt(861.00 sqft)

Architectural drawing

Architectural
Consultant
V.R.Baburaj

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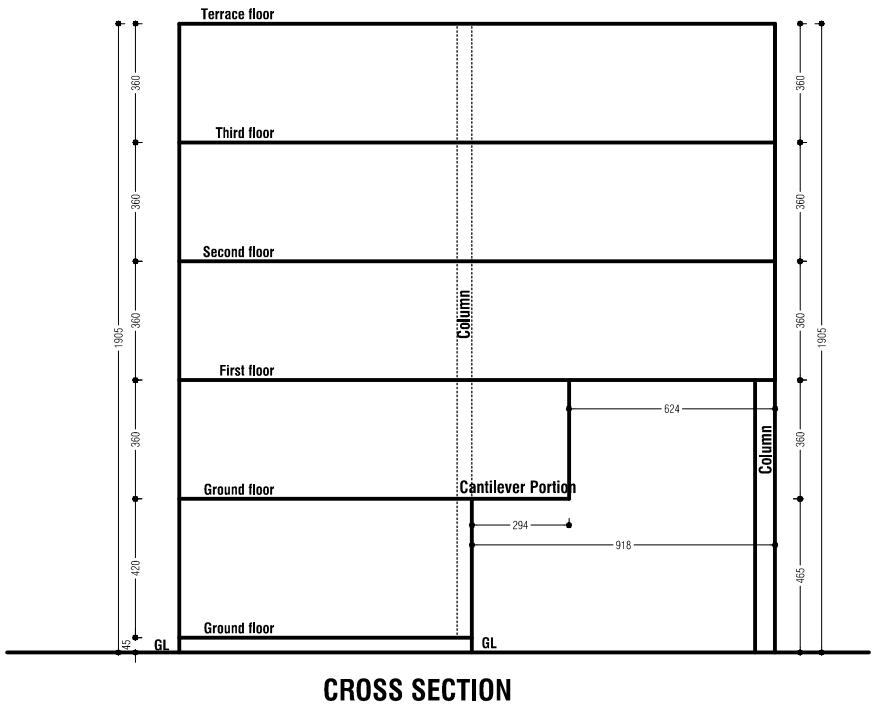
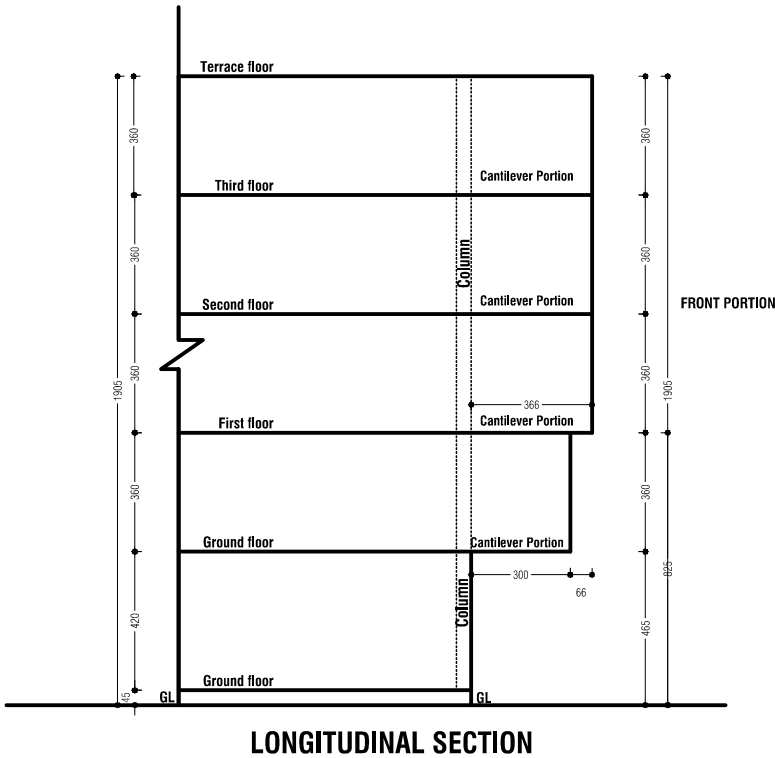
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PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



Architectural drawing

Architectural Consultant
V.R.Baburaj

CLIENT

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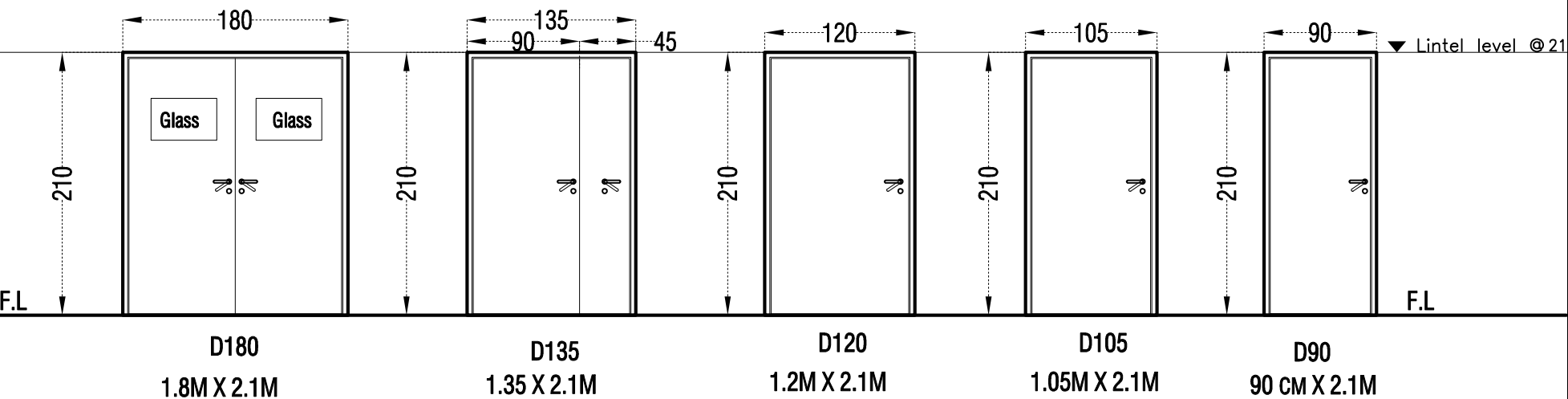
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PROPOSED NEW BLOCK FOR NS HOSPITAL

DOOR OPENING DETAILS

Specification: - WPC Door Frames with laminated door shutter using Marine Ply (710) with machine pressed edge-band lipping



DOOR TYPE		SIZE	QTY
1	D180	180cm x 210 cm	2
2	D135	135cm x 210 cm	40
3	D120	120cm x 210 cm	21
4	D105	105cm x 210 cm	49
5	D90	90cm x 210 cm	7
		Total	83Nos.

OWNER

NS HOSPITAL
KOLLAM

DRWGName

PROPOSED NEW BLOCK
FOR N.S HOSPITAL

DATE :

SCALE : 1:100

DIMS : : CM

DRAWN BY : S.B

CHECKED BY : MDB

SPECIFICATIONS

TYPE OF BUILDING
HOSPITAL

TITLE

OPENING DETAILS

ARCHITECTURAL
CONSULTANT

SIGNATURE :

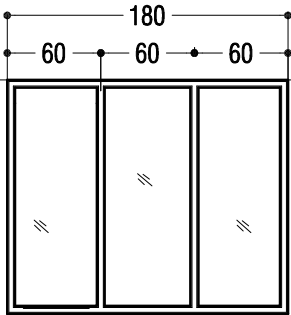
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SIGNATURE :

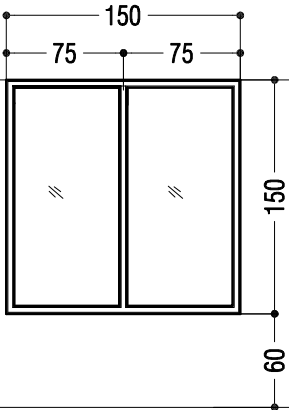
PROPOSED NEW BLOCK FOR NS HOSPITAL

WINDOW OPENING DETAILS

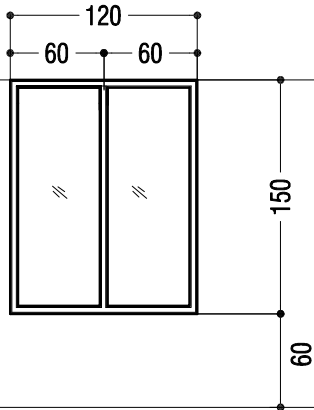
UPVC Windows



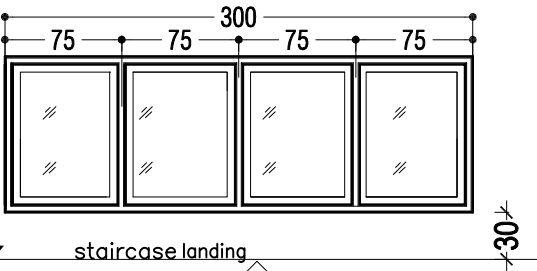
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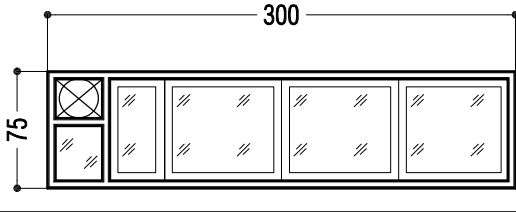
W2



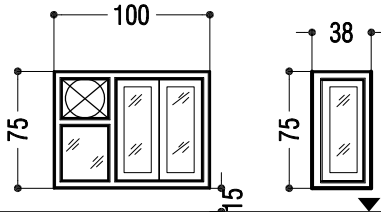
W2A



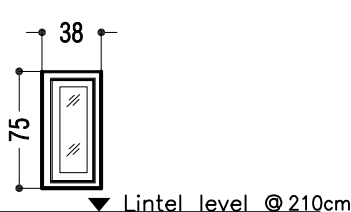
SW



V4



V1



VS

staircase landing

Ventilation 15cm above lintel

Lintel level @ 210cm

WINDOW TYPE		SIZE	QTY
1	W3	180cm x 150cm	22
2	W2	150cm x 150 cm	48
3	W2A	120cm x 150 cm	15
4	SW	300cm x 100 cm	6
5	V4	300cm x 75 cm	3
6	V1	100cm x 75 cm	48
7	VS	38cm x 75 cm	1
Total			103Nos.

OWNER

NS HOSPITAL
KOLLAM

DRWGName

PROPOSED NEW BLOCK
FOR N.S HOSPITAL

DATE :

SCALE : 1:100

DIMS : : CM

DRAWN BY : S.B

CHECKED BY : MDB

SPECIFICATIONS

TYPE OF BUILDING
HOSPITAL

TITLE

OPENING DETAILS

ARCHITECTURAL
CONSULTANT

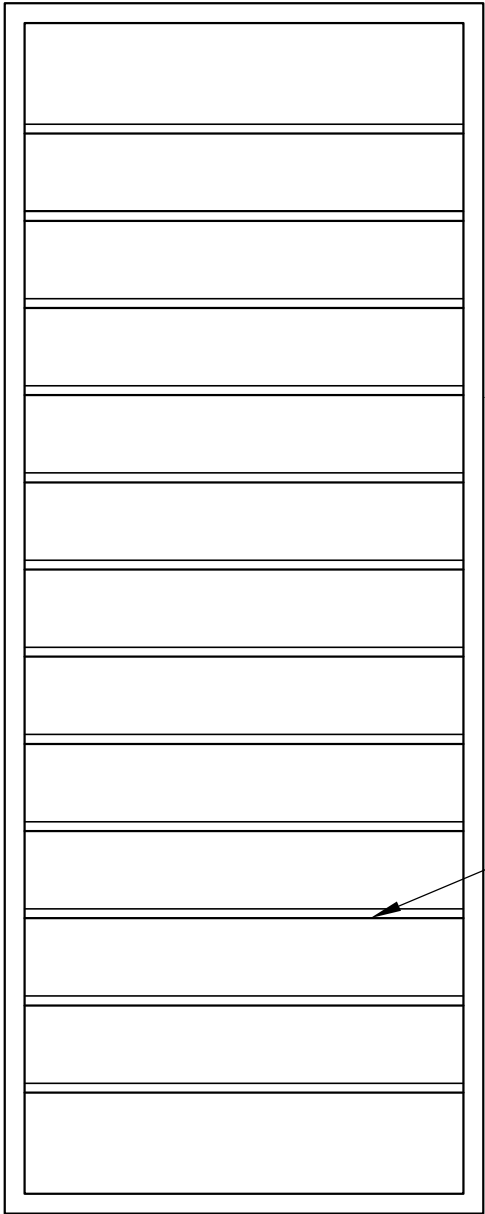
SIGNATURE :

OWNER :

SIGNATURE :

PROPOSED NEW BLOCK FOR N.S HOSPITAL

GRILL DESIGN



1.5" flat frame (6mm thick) fixed to walls

1" flat (6mm thick) 12- 14cm c/c welded to frame

GRILL DESIGN
N.S HOSPITAL

Architectural Consultant
V.R.Baburaj (B.Tech)
SCALE : NTS
All dims in centimeters unless specified

PROJECT
N.S Hospital
CLIENT
The President

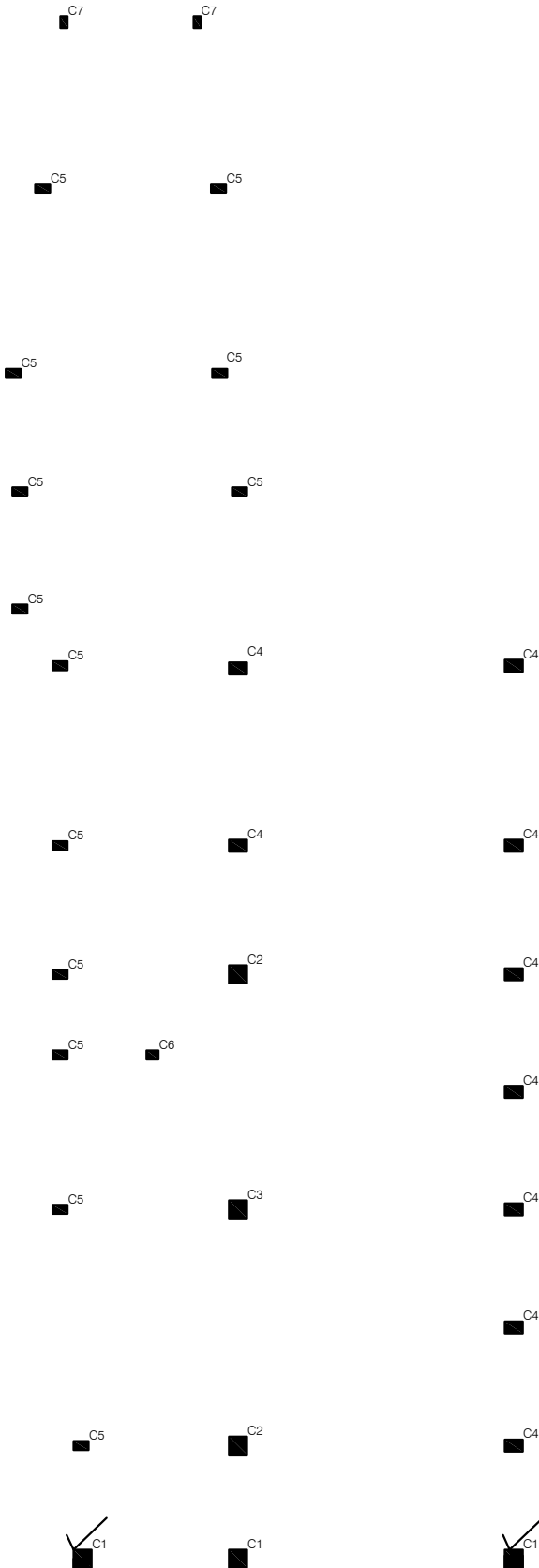
CONSULTANTS
 ABHILASH GROUP Civil / Architectural / Interior Consultants Thoppiladavu, Kollam- 691009, Kerala Phone: 0474-2792144, 2792134 www.abhilashgroup.com





TYPE	CHECKED BY	DRAWN BY	DATE
Health care	MD8	S.B	13/09/2021

STRUCTURAL DRAWINGS

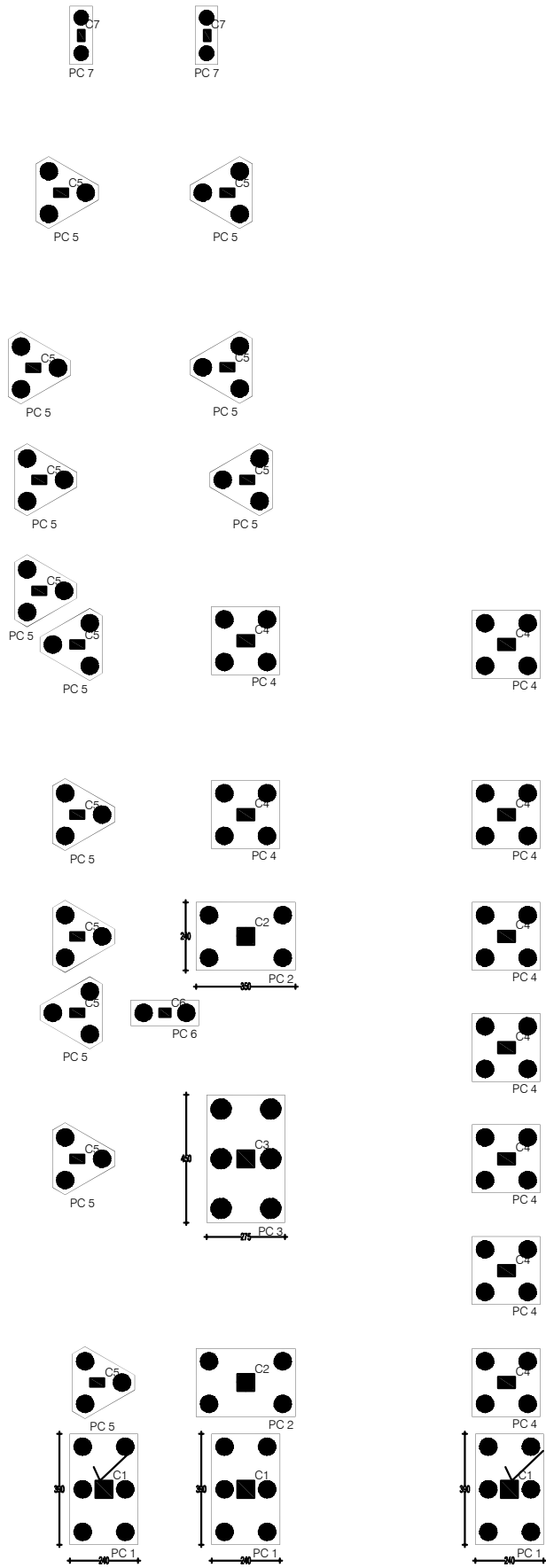
PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



Column Layout.

Structural drawing					Architectural Consultant V.R.Baburaj		CLIENT	CONSULTANTS ABHILASH ARCHITECTS Near Art Of Living Ashramam Thoppilkadavu, Kollam Kerala, India Pin- 691012 Tele No: +914742792144 +914742792134	 ABHILASH ARCHITECTS ART. PRECISION + ETHICS
	TYPE MEDICAL	CHECKED BY MDB	DRAWN BY CRG	DATE 25/08/2021	SCALE : 1 : 100 all dims in centimetres unless specified				

PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)










Pile & Pile Cap Layout.

Structural drawing				Architectural Consultant V.R.Baburaj		CLIENT	CONSULTANTS ABHILASH ARCHITECTS Near Art Of Living Ashramam Thoppilkadavu, Kollam Kerala, India Pin- 691012 Tele No: +914742792144 +914742792134
	TYPE MEDICAL	CHECKED BY MDB	DRAWN BY CRG	DATE 25/08/2021	SCALE : 1 : 100 all dims in centimetres unless specified		



PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)

Foundation Details. (Mix - M 25) and Fe 500 steel.

Columns.	C 1.	C 2.	C 3.	C 4.	C 5.	C 6.	C 7.
Column Details.							
Column Size.	60 x 60 cm.	60 x 60 cm.	60 x 60 cm.	40 x 60 cm.	30 x 60 cm.	30 x 40 cm.	24 x 40 cm.
Main Steel.	12 nos. - 25 #.	12 nos. - 25 #.	12 nos. - 25 #.	12 nos. - 20 #.	6 nos. - 25 # + 4 nos. - 20 #.	8 nos. - 20 #.	8 nos. - 16 #.
Ties Details.	8 # @ 15 cm c/c up to H/4 from top & bottom and 8 # @ 20 cm c/c for the centre portion.						

PILE & PILE CAP DETAILS.- Grade of Concrete - M 25 & Fe 500 steel.

Pile Cap	Pile Cap Size - cm.	Pile Details.				Pile Cap reinforcement Details.			
		No.	Dia.	Main Steel.	Stirrups.	Bottom Steel.	Top Steel.	Vertical Stirrups.	Horizontal Ties.
PC 1	240 x 390 x 120	6	60 cm.	10 nos.- 16 #.	8 # @ 20 cm C/C helical.	20 # @ 15 cm C/C.	16 # @ 15 cm C/C.	10 #. @ 15 cm C/C.	12 #. @ 15 cm C/C.
PC 2	350 x 240 x 110	5	60 cm.	10 nos.- 16 #.	8 # @ 20 cm C/C helical.	20 # @ 16 cm C/C.	16 # @ 16 cm C/C.	10 #. @ 15 cm C/C.	12 #. @ 15 cm C/C.
PC 3	275 x 450 x 120	6	70 cm.	12 nos.- 16 #.	10 # @ 20 cm C/C helical.	20 # @ 12 cm C/C.	16 # @ 15 cm C/C.	10 #. @ 15 cm C/C.	12 #. @ 15 cm C/C.
PC 4	240 x 240 x 100	4	60 cm.	10 nos.- 16 #.	8 # @ 20 cm C/C helical.	20 # @ 18 cm C/C.	16 # @ 18 cm C/C.	10 #. @ 15 cm C/C.	12 #. @ 15 cm C/C.
PC 5	As per sketch x 90	3	60 cm.	10 nos.- 16 #.	8 # @ 20 cm C/C helical.	16 # @ 15 cm C/C.	12 # @ 15 cm C/C.	10 #. @ 15 cm C/C.	10 #. @ 15 cm C/C.
PC 6	90 x 240 x 80	2	60 cm.	10 nos.- 16 #.	8 # @ 20 cm C/C helical.	5 nos.- 20 #.	3 nos.- 12 #.	10 #. @ 15 cm C/C.	10 #. @ 15 cm C/C.
PC 7	80 x 205 x 70	2	50 cm.	10 nos.- 12 #.	8 # @ 20 cm C/C helical.	5 nos.- 20 #.	3 nos.- 12 #.	10 #. @ 15 cm C/C.	10 #. @ 15 cm C/C.

Depth of pile is - 16.00 mtrs OR upto hard strata.

Provide stiffer ring of 12 # @ 100 cm c/c.

Structural drawing

Architectural
Consultant

V.R.Baburaj

CLIENT



TYPE
MEDICAL

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Tele No: +914742782144
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General Notes.

- 1. Foundation is Designed for G + 4 Building on Pile foundation.
- 2. Use M 25 (1 : 1.25 : 2.5) concrete with 43/53 grade cement and Fe 500 grade steel.
- 3. Use machine mix and mechanical vibrator for all structural members.
- 4. Proper size cover blocks to be used.
- 5. The clear cover for foundation is 40 mm, Columns 40 mm, Beams 25 mm and for Slab is 20 mm.
- 6. Lap lengths shall be 56 times bar diameter in tension and 48 times bar diameter in compression.
- 7. provide the laps on bottom rods at columns and the same for top rods between L/2 & L/3.
- 8. The laps provided for reinforcement should be staggered with a distance of minimum 1.5 times Ld.
- 9. All dimensions should be co ordinated with the architectural drawings.
- 10. The dimensions mentioned on drawing to be followed, not scaled.
- 11. Reinforcement steel shall be tested and strength as per BIS code shall be assured.
- 12. Stripping of shuttering of columns shall be done only after 24 hours after casting.
- 13. stripping of shuttering of beams shall be after 14 days.
- 14. stripping of shuttering of slab shall be after 10 days.
- 15. Bar bending shall be done as per SP 34 and BIS 456 - 2000.
- 16. Column concreting shall be done for a height of 1.50 m at a stretch.

Structural drawing				Architectural Consultant V.R.Baburaj	CLIENT	CONSULTANTS ABHILASH ARCHITECTS Near Art Of Living Ashramam Thoppilkadavu, Kollam Kerala, India Pin- 691012 Tele No: +914742792144 +914742792134
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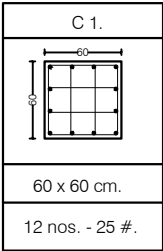
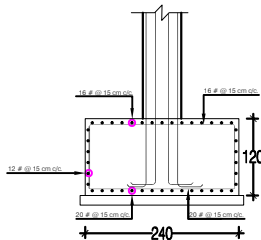
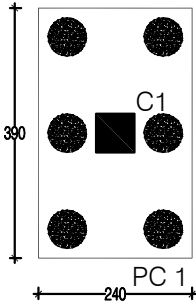


PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



Reinforcement Details of PC 1 - 240 x 390 x 120 cm.

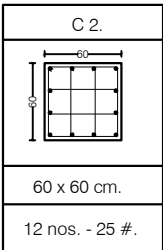
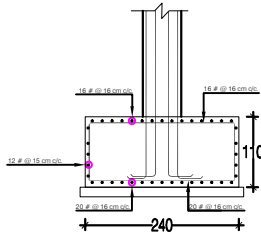
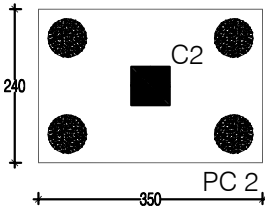
Depth of pile is - 16.00 mtrs OR upto hard strata.



60 cm dia. Rotary Pile.
10 nos. - 16 #.

Reinforcement Details of PC 2 - 350 x 240 x 110 cm.

Depth of pile is - 16.00 mtrs OR upto hard strata.



60 cm dia. Rotary Pile.
10 nos. - 16 #.

Structural drawing

Architectural
Consultant

V.R.Baburaj

CLIENT

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SCALE : 1 : 100

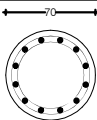
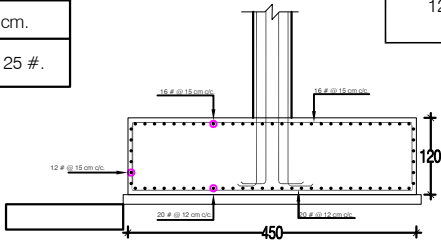
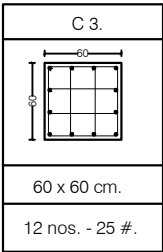
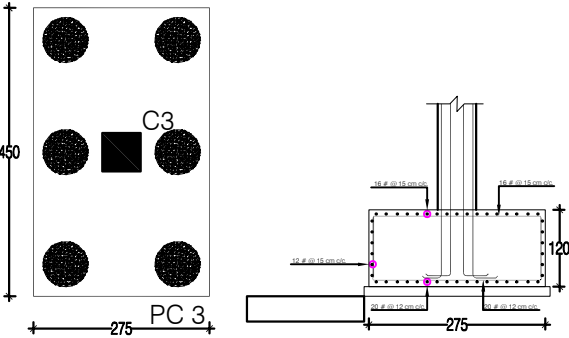
all dims in centimetres unless specified

PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



Reinforcement Details of PC 3 - 275 x 450 x 120 cm.

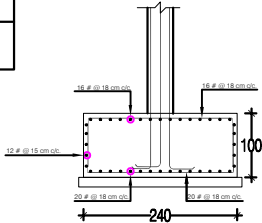
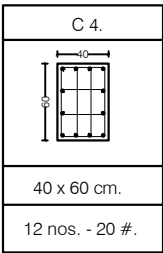
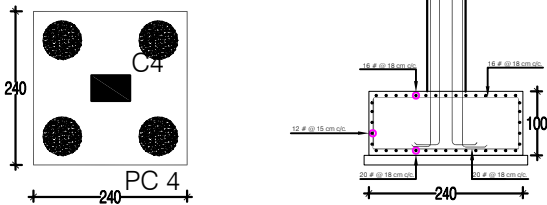
Depth of pile is - 16.00 mtrs OR upto hard strata.



70 cm dia. Rotary Pile.
12 nos. - 16 #.

Reinforcement Details of PC 4 - 240 x 240 x 100 cm.

Depth of pile is - 16.00 mtrs OR upto hard strata.



60 cm dia. Rotary Pile.
10 nos. - 16 #.

Structural drawing

Architectural
Consultant

V.R.Baburaj

CLIENT

CONSULTANTS

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ART. PRECISION + ETHICS



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DATE

25/08/2021

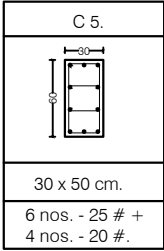
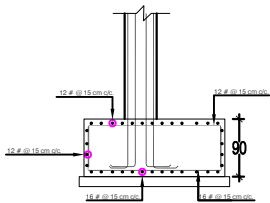
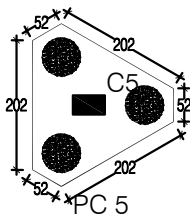
SCALE : 1 : 100

all dims in centimetres unless specified



Reinforcement Details of PC 5 - As per Sketch x 90 cm.

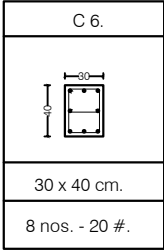
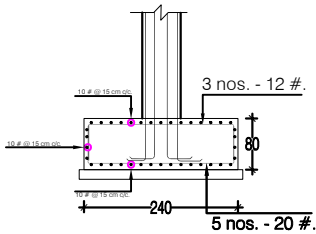
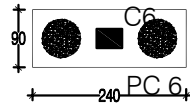
Depth of pile is - 16.00 mtrs OR upto hard strata.



60 cm dia. Rotary Pile.
10 nos. - 16 #.

Reinforcement Details of PC 6 - 240 x 90 x 80 cm.

Depth of pile is - 16.00 mtrs OR upto hard strata.



60 cm dia. Rotary Pile.
10 nos. - 16 #.

Structural drawing

Architectural
Consultant
V.R.Baburaj

CLIENT

CONSULTANTS
ABHILASH ARCHITECTS
Near Art Of Living Ashramam
Thoppilkadavu, Kollam
Kerala, India
Pin- 691012
Tele No: +914742792144
+914742792134

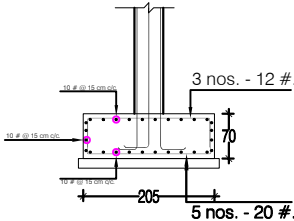
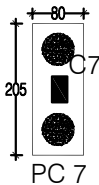


PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)

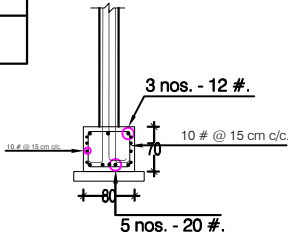


Reinforcement Details of PC 7 - 205 x 80 x 70 cm.

Depth of pile is - 16.00 mtrs OR upto hard strata.



C 7.
24 x 40 cm.
8 nos. - 16 #.



50



50 cm dia. Rotary Pile.
10 nos. - 12 #.

Structural drawing

Architectural
Consultant
V.R.Baburaj

CLIENT

CONSULTANTS
ABHILASH ARCHITECTS
Near Art Of Living Ashramam
Thoppilkadavu, Kollam
Kerala, India
Pin- 691012
Tele No: +914742792144
+914742792134



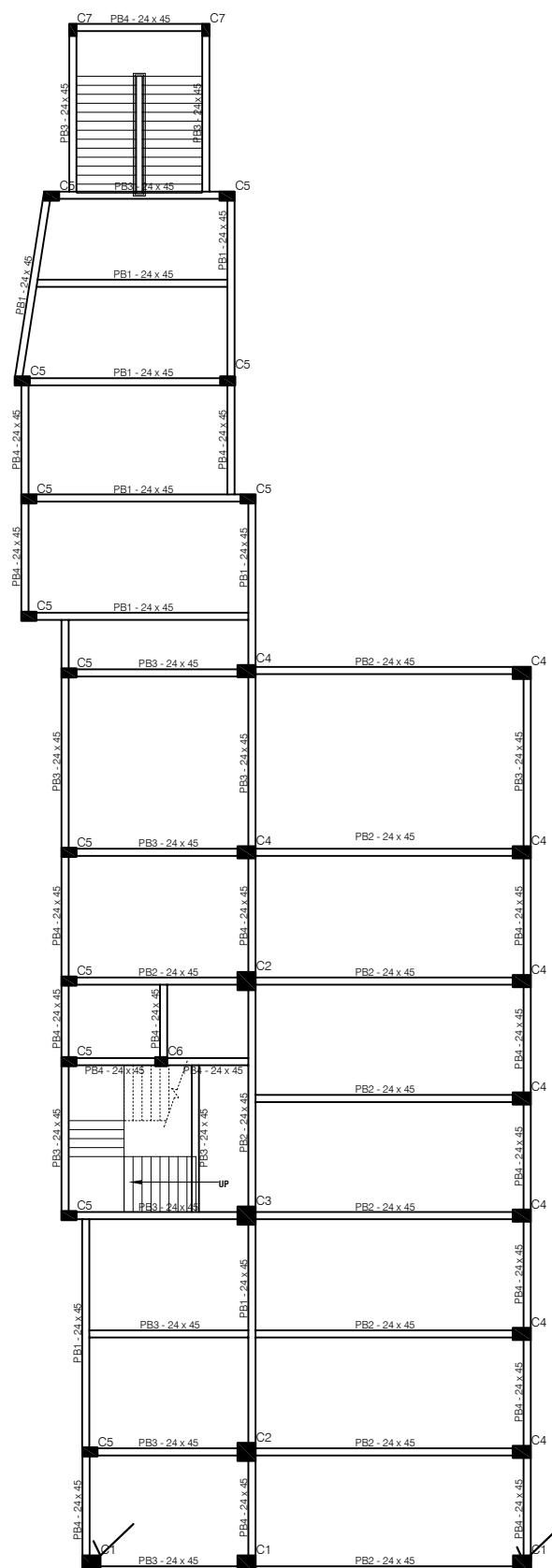
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MEDICAL

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MDB

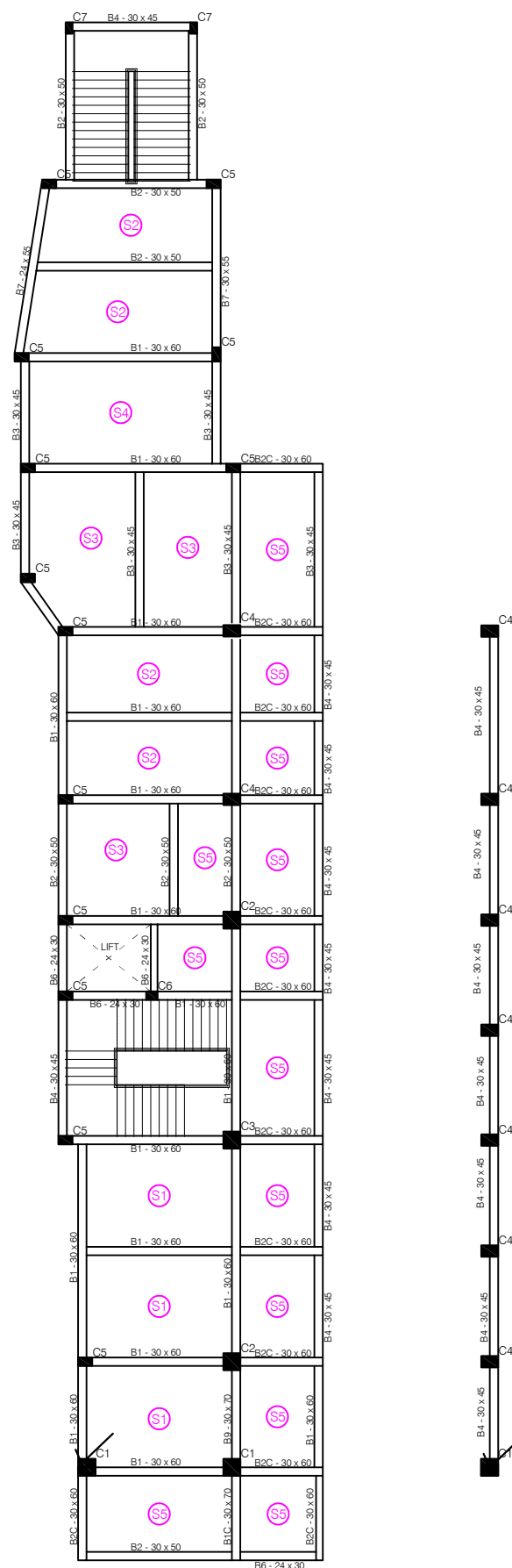
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DATE
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Plinth Beam Layout.



Beam & Slab Layout - First Floor Level.

Structural drawing

Architectural
Consultant

V.R.Baburaj

CLIENT

CONSULTANTS

ABHILASH ARCHITECTS

Near Art Of Living Ashramam
Thoppilkadavu, Kollam
Kerala, India
Pin- 691012

Tele No: +914742792144



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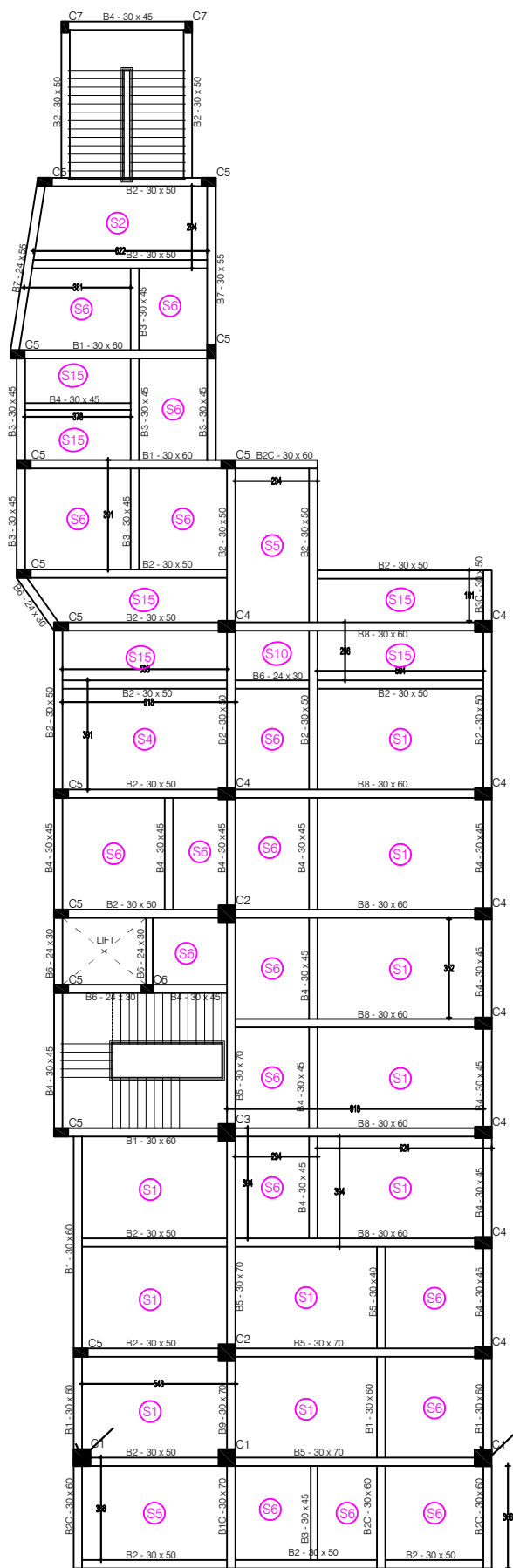
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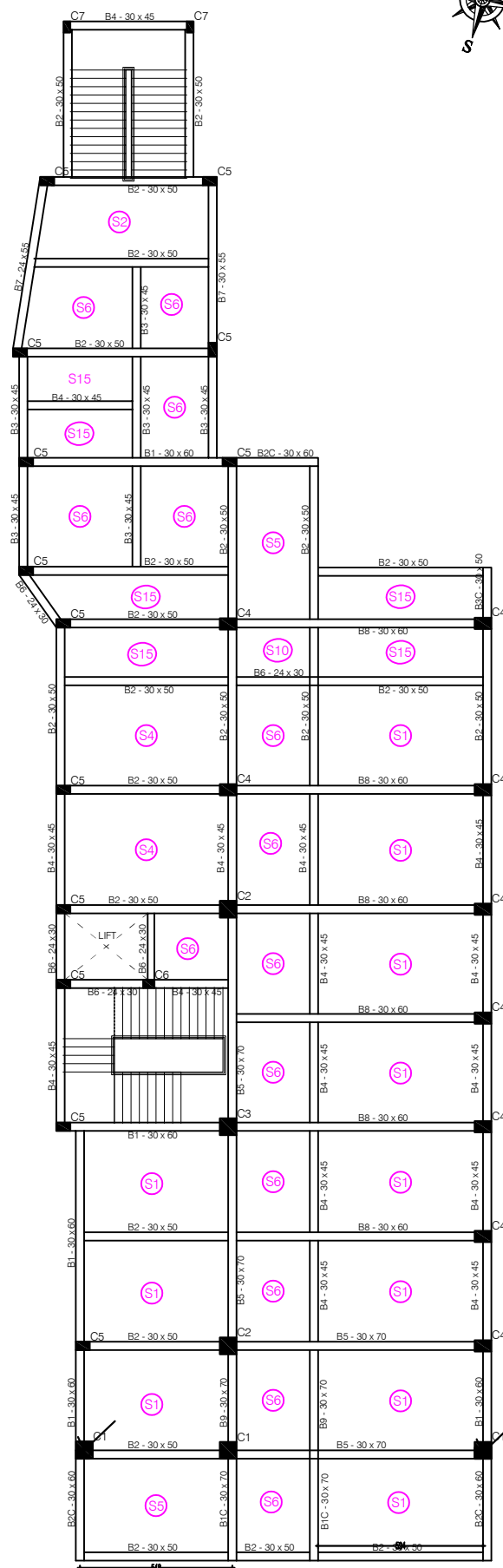
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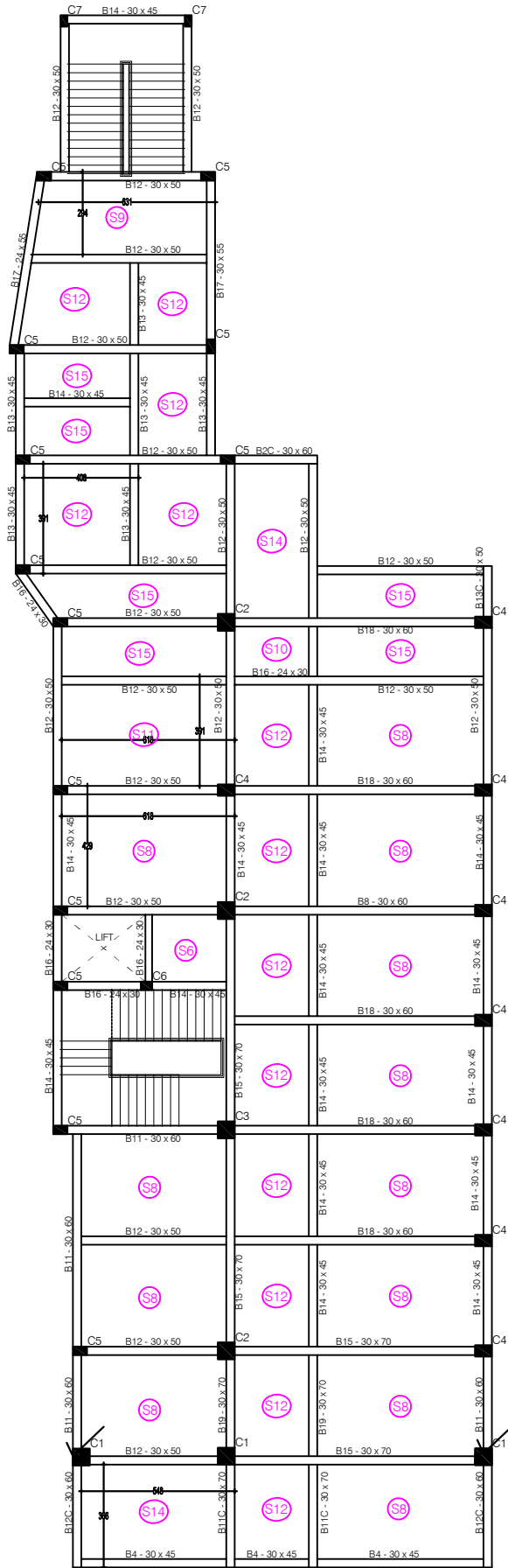
Beam & Slab Layout - Second Floor Level.



Beam & Slab Layout - Third & Fourth Floor Level.

Structural drawing					Architectural Consultant V.R.Baburaj	CLIENT	CONSULTANTS ABHILASH ARCHITECTS Near Art Of Living Ashramam Thoppilkadavu, Kollam Kerala, India Pin- 691012 Tele No: +914742792144 +914742792134	 ABHILASH ARCHITECTS ART PRECISION + ETHICS
	TYPE MEDICAL	CHECKED BY MDB	DRAWN BY CRG	DATE 25/08/2021	SCALE : 1 : 100 all dims in centimetres unless specified			

PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



Beam & Slab Layout - Roof Floor Level.

Structural drawing				Architectural Consultant V.R.Baburaj		CLIENT		CONSULTANTS ABHILASH ARCHITECTS Near Art Of Living Ashramam Thoppilkadavu, Kollam Kerala, India Pin- 691012 Tele No: +914742792144 +914742792134	
<div>1/1</div>	TYPE MEDICAL	CHECKED BY MDB	DRAWN BY CRG	DATE 25/08/2021	SCALE : 1 : 100 all dims in centimetres unless specified			<div>ABHILASH ARCHITECTS</div> <div>ART PRECISION + ETHICS</div>	

PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



Plinth Beam Details.M25 and Fe500

Beam No.	Beam Size.- cm.	Bottom Reinforcement.		Top Reinforcement.		Stirrups Details.
		Middle.	Support.	Middle.	Support.	
PB 1	24 x 45	4 nos. - 20 #.	4 nos. - 20 #.	2 nos. - 20 #.	2 nos. - 20 # + 2 nos. - 20 #.	8 # @ 20 cm c/c upto L/4 from support and 8 # @ 25 cm c/c at centre.
PB 2	24 x 45	5 nos. - 20 #.	5 nos. - 20 #.	2 nos. - 20 #.	2 nos. - 20 # + 3 nos. - 20 #.	8 # @ 20 cm c/c upto L/4 from support and 8 # @ 25 cm c/c at centre.
PB 3	24 x 45	4 nos. - 16 #.	4 nos. - 16 #.	2 nos. - 16 #.	2 nos. - 16 # + 2 nos. - 16 #.	8 # @ 20 cm c/c upto L/4 from support and 8 # @ 25 cm c/c at centre.
PB 4	24 x 45	3 nos. - 16 #.	3 nos. - 16 #.	2 nos. - 16 #.	2 nos. - 16 # + 1 nos. - 16 #.	8 # @ 20 cm c/c upto L/4 from support and 8 # @ 25 cm c/c at centre.

* Note:- All Plint Beams are having a P. C. C. Bed of 45 cm x 15 cm. as shown in the section.

BEAMS DETAILS.M25 and Fe500

Beam No.	Beam Size.- cm.	Bottom Reinforcement.		Top Reinforcement.		Stirrups Details.
		Middle.	Support.	Middle.	Support.	
B 1	30 x 60	5 nos. - 25 #.	5 nos. - 25 #.	2 nos. - 25 #.	2 nos. - 25 # + 4 nos. - 25 #.	8 # @ 15 cm c/c upto L/4 from support and 8 # @ 20 cm c/c at centre.
B 2	30 x 50	4 nos. - 16 #.	4 nos. - 16 #.	2 nos. - 16 #.	2 nos. - 16 # + 3 nos. - 16 #.	8 # @ 15 cm c/c upto L/4 from support and 8 # @ 20 cm c/c at centre.
B 3	30 x 45	5 nos. - 16 #.	5 nos. - 16 #.	2 nos. - 16 #.	2 nos. - 16 # + 3 nos. - 16 #.	8 # @ 15 cm c/c upto L/4 from support and 8 # @ 20 cm c/c at centre.
B 4	30 x 45	4 nos. - 16 #.	4 nos. - 16 #.	2 nos. - 20 #.	2 nos. - 20 # + 3 nos. - 20 #.	8 # @ 15 cm c/c upto L/4 from support and 8 # @ 20 cm c/c at centre.
B 5	30 x 70	8 nos. - 25 #.	8 nos. - 25 #.	2 nos. - 25 #.	2 nos. - 25 # + 6 nos. - 25 #.	10 # @ 15 cm c/c upto L/4 from support and 10 # @ 20 cm c/c at centre.
B 6	24 x 30	4 nos. - 12 #.	4 nos. - 12 #.	2 nos. - 16 #.	2 nos. - 16 # + 1 nos. - 16 #.	8 # @ 20 cm c/c upto L/4 from support and 8 # @ 25 cm c/c at centre.
B 7	30 x 55	5 nos. - 16 #.	5 nos. - 16 #.	2 nos. - 16 #.	2 nos. - 16 # + 3 nos. - 16 #.	8 # @ 15 cm c/c upto L/4 from support and 8 # @ 20 cm c/c at centre.
B 8	30 x 60	5 nos. - 25 #.	5 nos. - 25 #.	2 nos. - 25 #.	2 nos. - 25 # + 4 nos. - 25 #.	10 # @ 15 cm c/c upto L/4 from support and 10 # @ 20 cm c/c at centre.
B 9	30 x 70	4 nos. - 20 #.	4 nos. - 20 #.	8 nos. - 25 #.	8 nos. - 25 #.	10 # @ 15 cm c/c upto L/4 from support and 10 # @ 20 cm c/c at centre.
B 1C	30 x 70	4 nos. - 20 #.	4 nos. - 20 #.	8 nos. - 25 #.	8 nos. - 25 #.	10 # @ 15 cm c/c.
B 2C	30 x 60	3 nos. - 20 #.	3 nos. - 20 #.	6 nos. - 25 #.	6 nos. - 25 #.	10 # @ 15 cm c/c.
B 3C	30 x 50	3 nos. - 20 #.	3 nos. - 20 #.	5 nos. - 20 #.	5 nos. - 20 #.	10 # @ 15 cm c/c.


Structural drawing

Architectural Consultant
V.R.Baburaj

CLIENT

CONSULTANTS

ABHILASH ARCHITECTS
Near Art Of Living Ashramam
Thoppilkadavu, Kollam
Kerala, India
Pin- 691012
Tele No: +914742792144
+914742792134


ABHILASH ARCHITECTS
ART. PRECISION + ETHICS

1/1

TYPE
MEDICAL

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DATE
25/08/2021

SCALE : 1 : 100
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PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



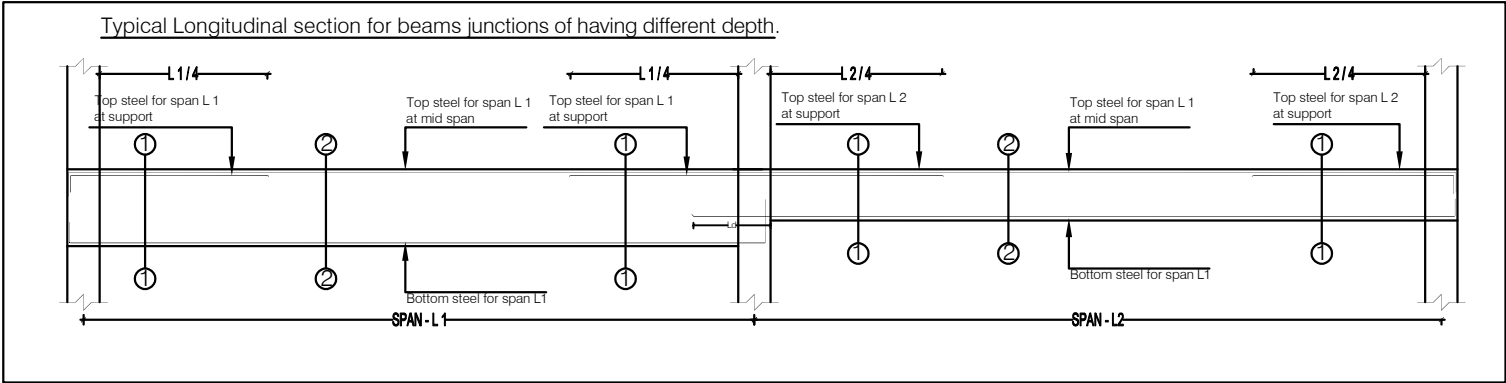
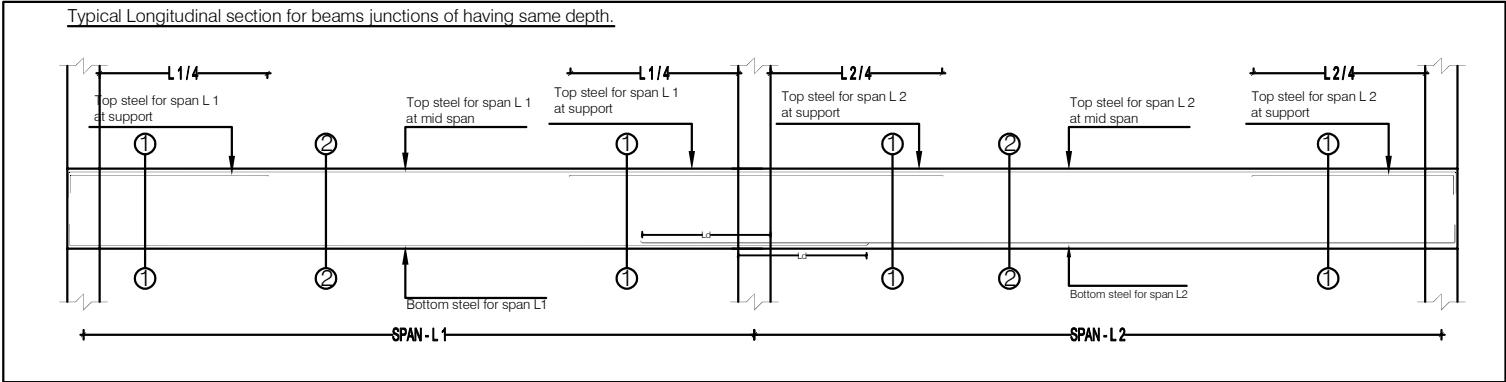
FloorSlab Details. (Mix - M 25 and Fe500)

Slab.	Thickness.	Reinforcement Details.				Remarks.
	cm.	Short Span.		Long Span.		
		Mid Span.	At Support.	Mid Span.	At Support.	
S 1.	13.	10 # @ 16 cm C/C. Alternate bars bends up at L/5	10 # @ 16 cm C/C. Including extra upto L/4	8 # @ 18 cm C/C. Alternate bars bends up at L/5	8 # @ 18 cm C/C. Including extra upto L/4	Two way slab.
S 2.	12.	8 # @ 15 cm C/C. Alternate bars bends up at L/5	8 # @ 15 cm C/C. Including extra upto L/4	8 # @ 22 cm C/C. Alternate bars bends up at L/5	8 # @ 22 cm C/C. Including extra upto L/4	Two way slab.
S 3.	12.	8 # @ 15 cm C/C. Alternate bars bends up at L/5	8 # @ 15 cm C/C. Including extra upto L/4	8 # @ 20 cm C/C. Alternate bars bends up at L/5	8 # @ 20 cm C/C. Including extra upto L/4	Two way slab.
S 4.	12.	8 # @ 12 cm C/C. Alternate bars bends up at L/5	8 # @ 12 cm C/C. Including extra upto L/4	8 # @ 20 cm C/C. Alternate bars bends up at L/5	8 # @ 20 cm C/C. Including extra upto L/4	Two way slab.
S 5.	12.	8 # @ 14 cm C/C. Alternate bars bends up at L/5	8 # @ 14 cm C/C. Including extra upto L/4	8 # @ 20 cm C/C. Alternate bars bends up at L/5	8 # @ 20 cm C/C. Including extra upto L/4	Two way slab.
S 6.	12.	8 # @ 17 cm C/C. Alternate bars bends up at L/5	8 # @ 17 cm C/C. Including extra upto L/4	8 # @ 20 cm C/C. Alternate bars bends up at L/5	8 # @ 20 cm C/C. Including extra upto L/4	Two way slab.
S 7.	12.	10 # @ 15 cm C/C. Alternate bars bends up at L/5	10 # @ 15 cm C/C. Including extra upto L/4	8 # @ 20 cm C/C. Alternate bars bends up at L/5	8 # @ 20 cm C/C. Including extra upto L/4	Two way slab.

PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)

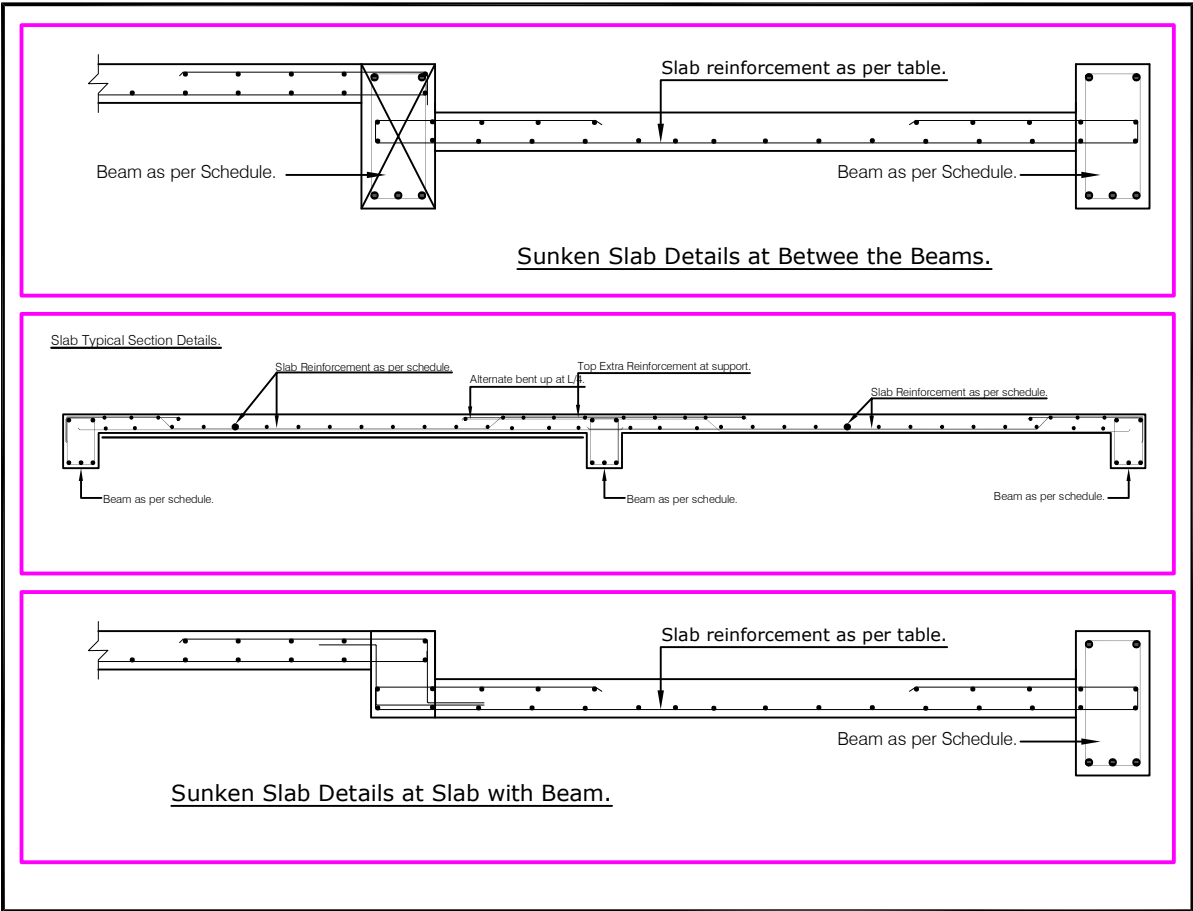


Typical Beam Section Details.

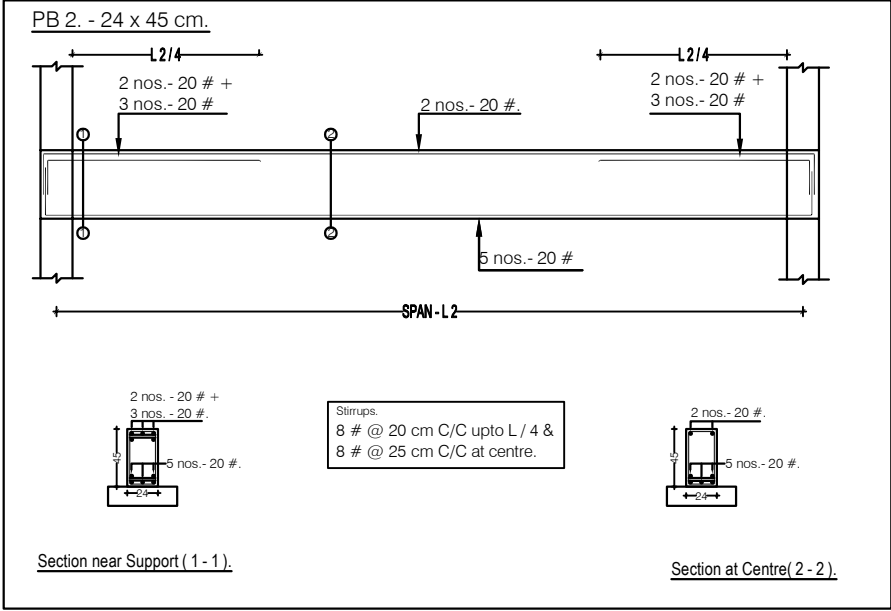
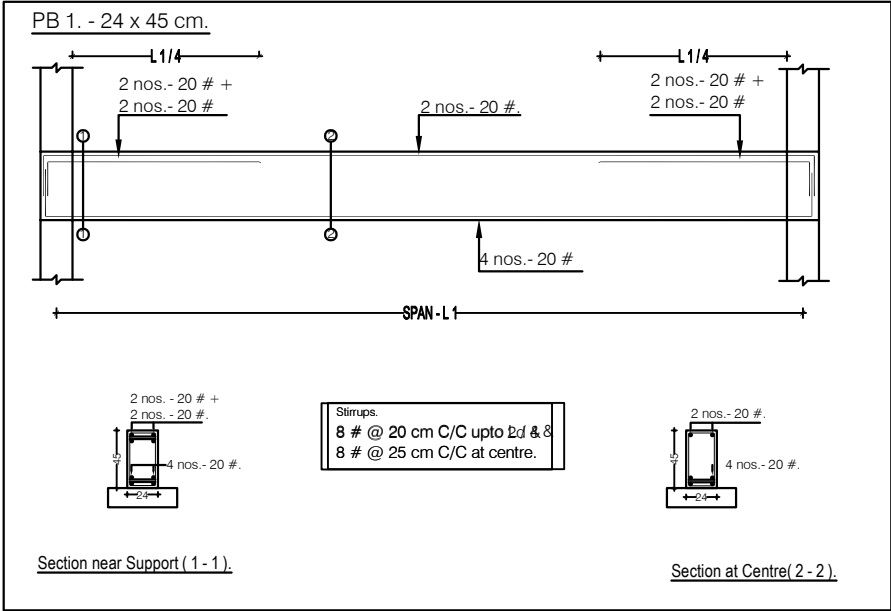




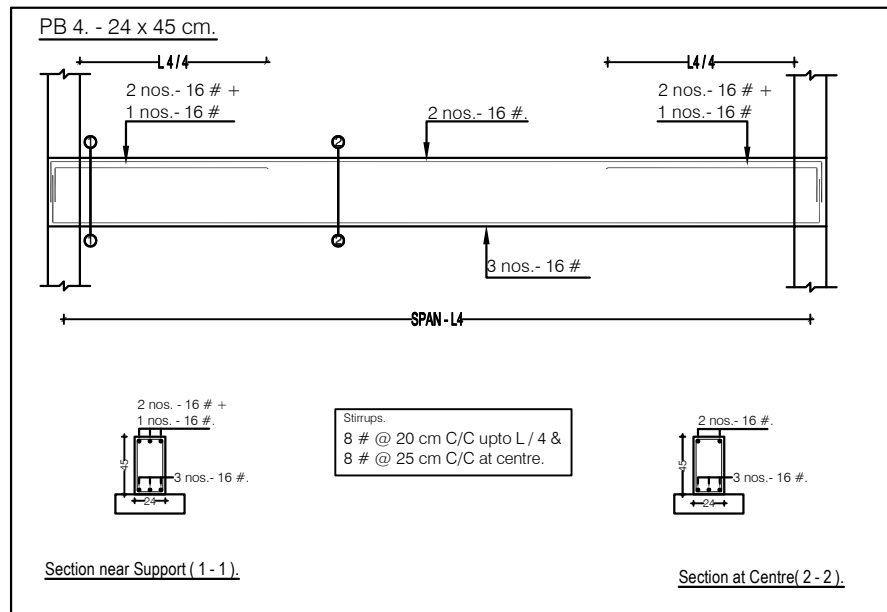
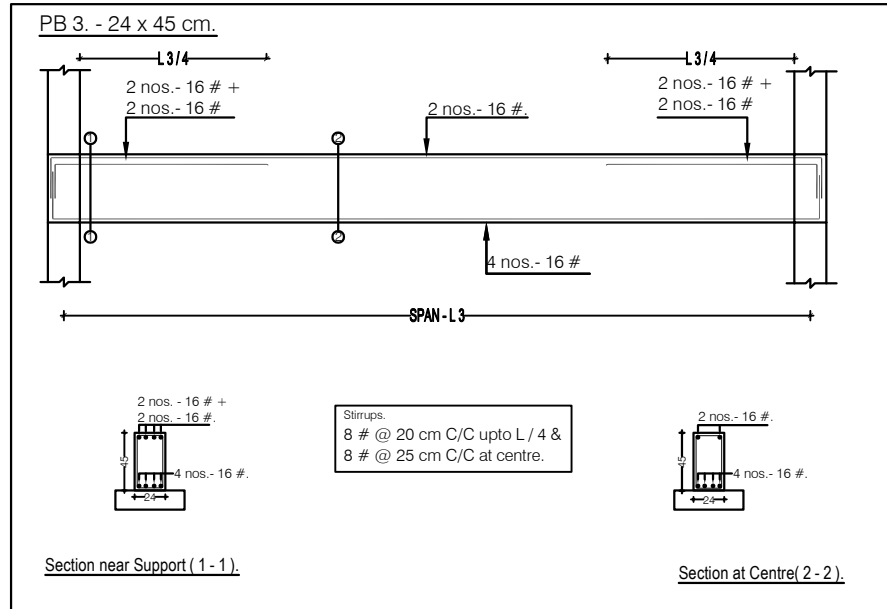
Sunken Slab Section Details.



PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



Structural drawing

Architectural
Consultant

V.R.Baburaj

CLIENT

CONSULTANTS

ABHILASH ARCHITECTS

Near Art Of Living Ashramam
Thoppilkadavu, Kollam
Kerala, India
Pin- 691012

Tele No: +914742792144
+914742792134



ABHILASH ARCHITECTS
ART. PRECISION + ETHICS



TYPE

MEDICAL

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25/08/2021

SCALE : 1 : 100

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PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



BEAMS DETAILS.M25 and Fe500

Beam No.	Beam Size.- cm.	Bottom Reinforcement.		Top Reinforcement.		Stirrups Details.
		Middle.	Support.	Middle.	Support.	
B 11	30 x 60	4 nos. - 20 #.	4 nos. - 20 #.	2 nos. - 20 #.	2 nos. - 20 # + 3 nos. - 20 #.	8 # @ 15 cm c/c upto L/4 from support and 8 # @ 20 cm c/c at centre.
B 12	30 x 50	3 nos. - 16 #.	3 nos. - 16 #.	2 nos. - 16 #.	2 nos. - 16 # + 2 nos. - 16 #.	8 # @ 15 cm c/c upto L/4 from support and 8 # @ 20 cm c/c at centre.
B 13	30 x 45	3 nos. - 16 #.	3 nos. - 16 #.	2 nos. - 16 #.	2 nos. - 16 # + 2 nos. - 16 #.	8 # @ 15 cm c/c upto L/4 from support and 8 # @ 20 cm c/c at centre.
B 14	30 x 45	4 nos. - 16 #.	4 nos. - 16 #.	2 nos. - 16 #.	2 nos. - 16 # + 2 nos. - 16 #.	8 # @ 15 cm c/c upto L/4 from support and 8 # @ 20 cm c/c at centre.
B 15	30 x 60	5 nos. - 20 #.	5 nos. - 20 #.	2 nos. - 20 #.	2 nos. - 20 # + 4 nos. - 20 #.	10 # @ 15 cm c/c upto L/4 from support and 10 # @ 20 cm c/c at centre.
B 16	24 x 30	4 nos. - 12 #.	4 nos. - 12 #.	2 nos. - 16 #.	2 nos. - 16 # + 1 nos. - 16 #.	8 # @ 20 cm c/c upto L/4 from support and 8 # @ 25 cm c/c at centre.
B 17	30 x 55	4 nos. - 16 #.	4 nos. - 16 #.	2 nos. - 16 #.	2 nos. - 16 # + 4 nos. - 16 #.	8 # @ 15 cm c/c upto L/4 from support and 8 # @ 20 cm c/c at centre.
B 18	30 x 60	5 nos. - 20 #.	5 nos. - 20 #.	2 nos. - 20 #.	2 nos. - 20 # + 3 nos. - 20 #.	10 # @ 15 cm c/c upto L/4 from support and 10 # @ 20 cm c/c at centre.
B 19	30 x 70	4 nos. - 20 #.	4 nos. - 20 #.	8 nos. - 25 #.	8 nos. - 25 #.	10 # @ 15 cm c/c upto L/4 from support and 10 # @ 20 cm c/c at centre.
B 11C	30 x 70	3 nos. - 20 #.	3 nos. - 20 #.	6 nos. - 20 #.	6 nos. - 20 #.	10 # @ 15 cm c/c.
B 12C	30 x 60	3 nos. - 20 #.	3 nos. - 20 #.	5 nos. - 20 #.	5 nos. - 20 #.	10 # @ 15 cm c/c.
B 13C	30 x 50	3 nos. - 20 #.	3 nos. - 20 #.	5 nos. - 20 #.	5 nos. - 20 #.	10 # @ 15 cm c/c.

Roof Slab Details. (Mix - M 25 and Fe500)

Slab.	Thickness.	Reinforcement Details.				Remarks.
	cm.	Short Span.		Long Span.		
		Mid Span.	At Support.	Mid Span.	At Support.	
S 8.	12.	10 # @ 14 cm C/C. Alternate bars bends up at L/5	10 # @ 14 cm C/C. Including extra upto L/4	8 # @ 20 cm C/C. Alternate bars bends up at L/5	8 # @ 20 cm C/C. Including extra upto L/4	Two way slab.
S 9.	12.	8 # @ 18 cm C/C. Alternate bars bends up at L/5	8 # @ 18 cm C/C. Including extra upto L/4	8 # @ 22 cm C/C. Alternate bars bends up at L/5	8 # @ 22 cm C/C. Including extra upto L/4	Two way slab.
S 10.	12.	8 # @ 17 cm C/C. Alternate bars bends up at L/5	8 # @ 17 cm C/C. Including extra upto L/4	8 # @ 22 cm C/C. Alternate bars bends up at L/5	8 # @ 22 cm C/C. Including extra upto L/4	Two way slab.
S 11.	12.	8 # @ 16 cm C/C. Alternate bars bends up at L/5	8 # @ 16 cm C/C. Including extra upto L/4	8 # @ 22 cm C/C. Alternate bars bends up at L/5	8 # @ 22 cm C/C. Including extra upto L/4	Two way slab.
S 12.	12.	8 # @ 18 cm C/C. Alternate bars bends up at L/5	8 # @ 18 cm C/C. Including extra upto L/4	8 # @ 20 cm C/C. Alternate bars bends up at L/5	8 # @ 20 cm C/C. Including extra upto L/4	Two way slab.
S 13.	12.	8 # @ 14 cm C/C. Alternate bars bends up at L/5	8 # @ 14 cm C/C. Including extra upto L/4	8 # @ 20 cm C/C. Alternate bars bends up at L/5	8 # @ 20 cm C/C. Including extra upto L/4	Two way slab.
S 14.	12.	8 # @ 17 cm C/C. Alternate bars bends up at L/5	8 # @ 17 cm C/C. Including extra upto L/4	8 # @ 20 cm C/C. Alternate bars bends up at L/5	8 # @ 20 cm C/C. Including extra upto L/4	Two way slab.
S 15.	12.	8 # @ 20 cm C/C. Alternate bars bends up at L/5	8 # @ 20 cm C/C. Including extra upto L/4	8 # @ 22 cm C/C. Alternate bars bends up at L/5	8 # @ 22 cm C/C. Including extra upto L/4	Two way slab.

Structural drawing

Architectural
Consultant

V.R.Baburaj

CLIENT

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ABHILASH ARCHITECTS

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ABHILASH ARCHITECTS
ART. PRECISION + ETHICS



TYPE

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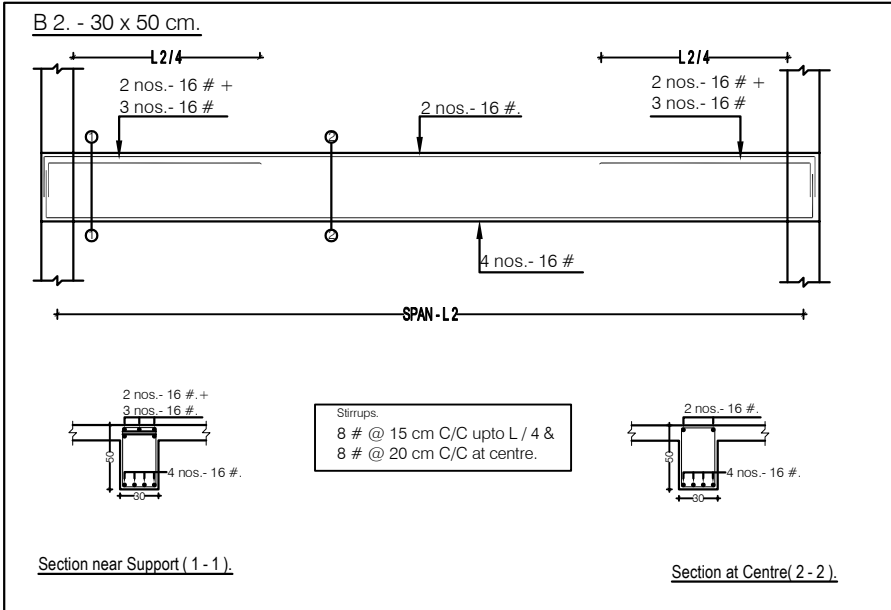
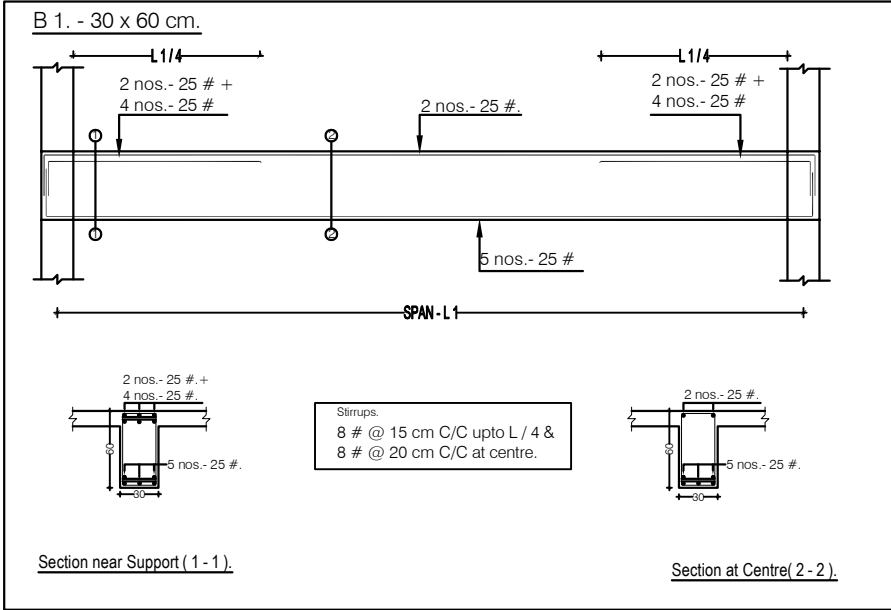
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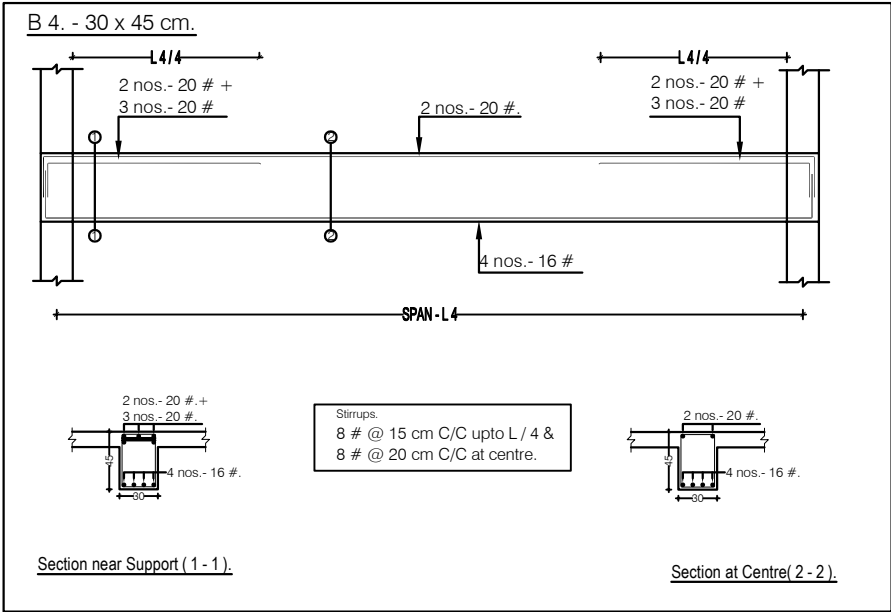
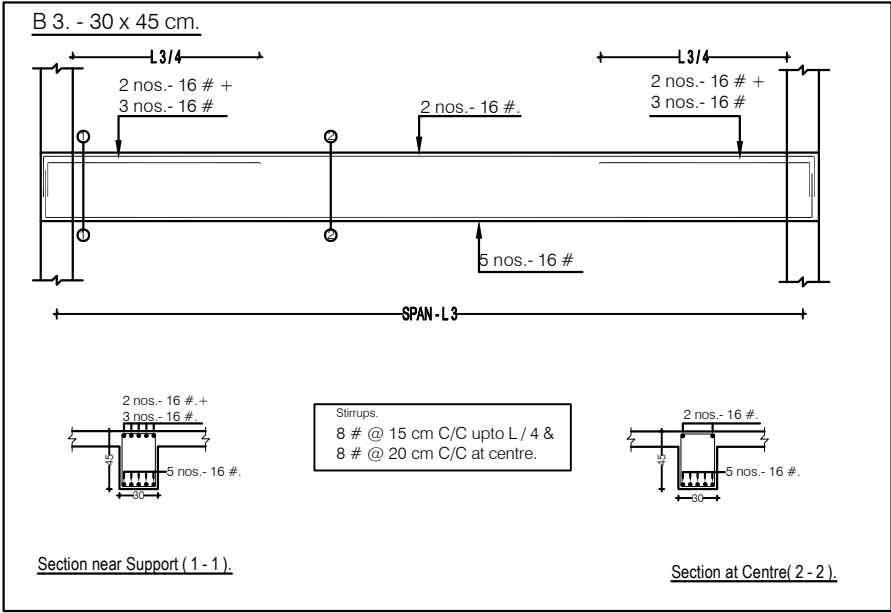
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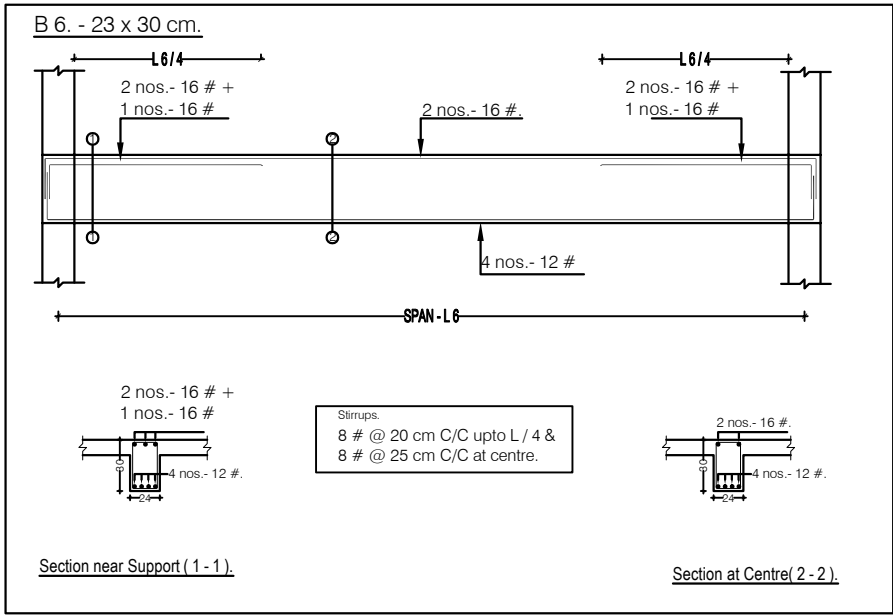
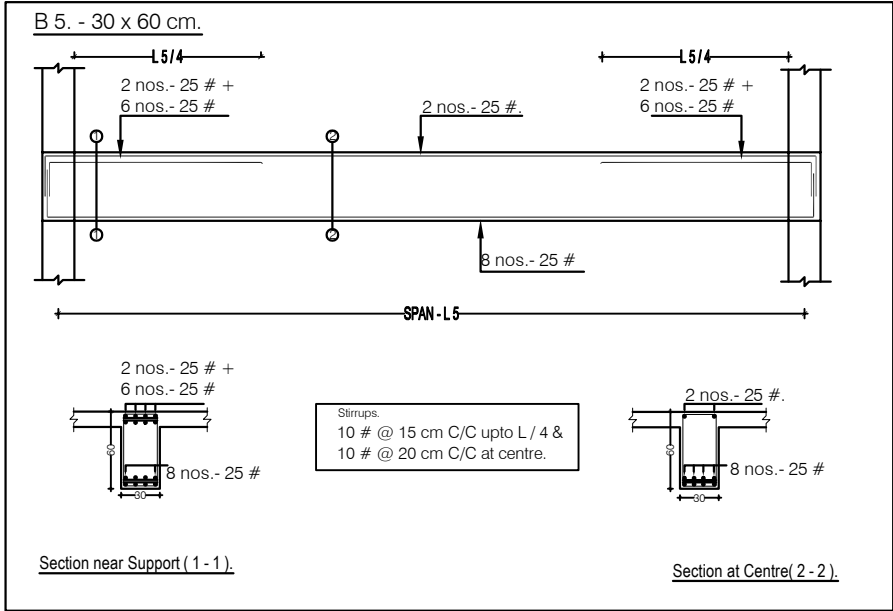
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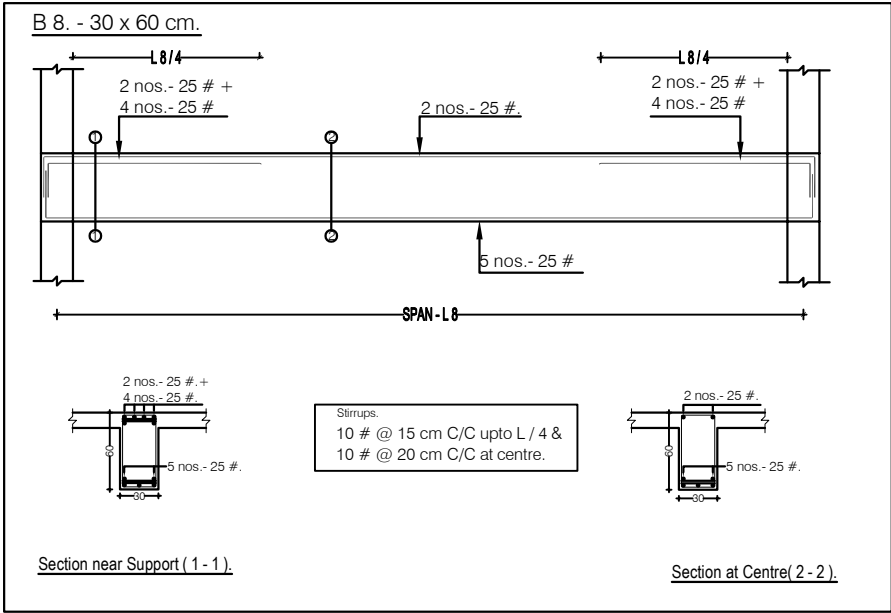
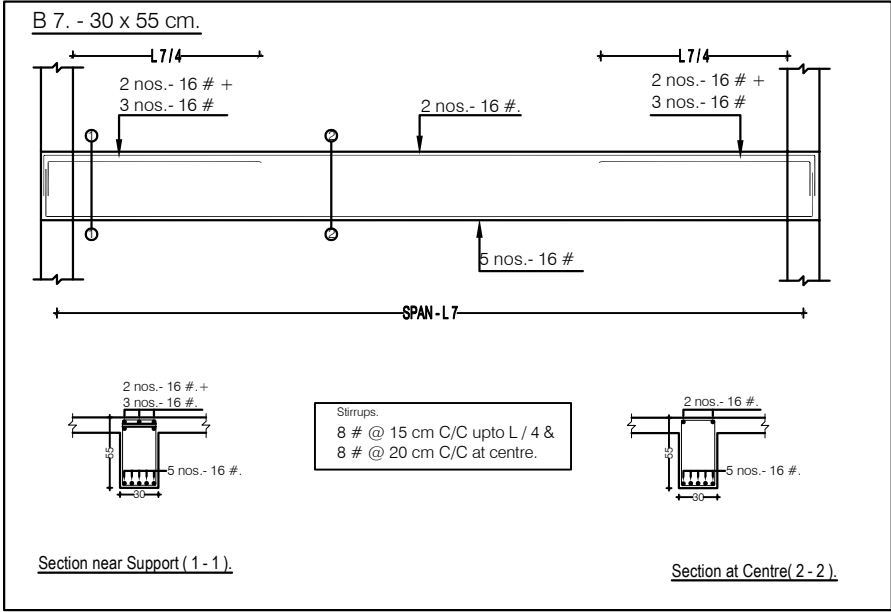


PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)

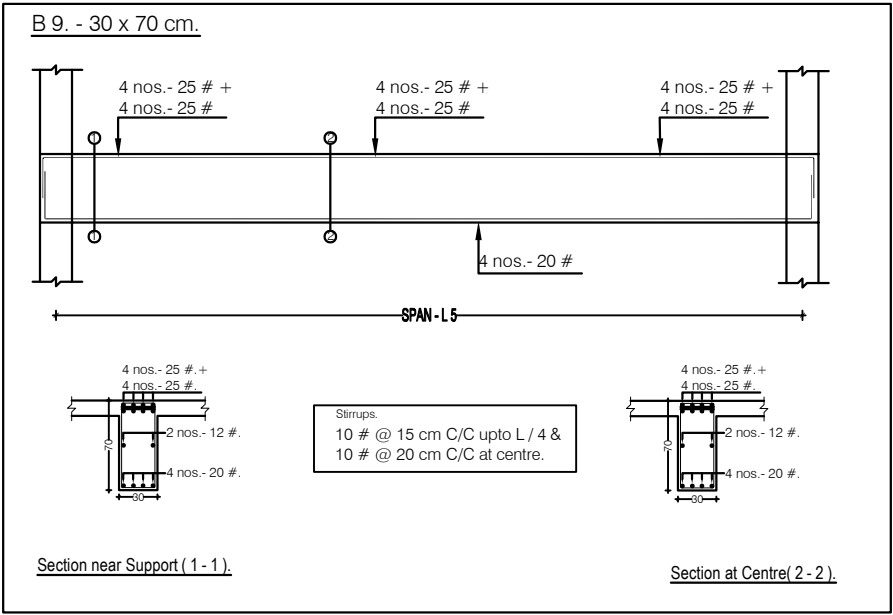




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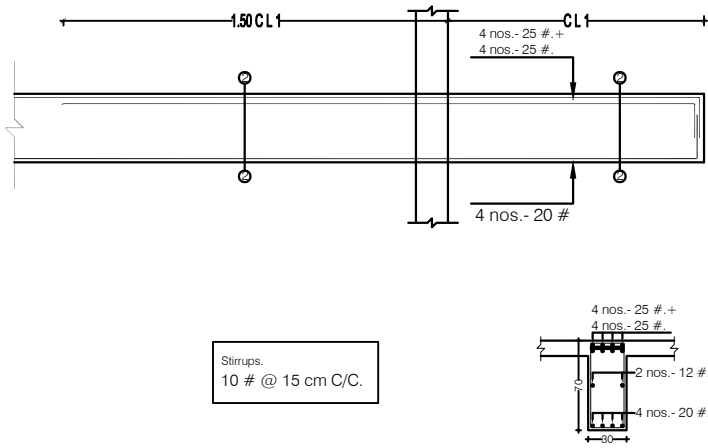
PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)

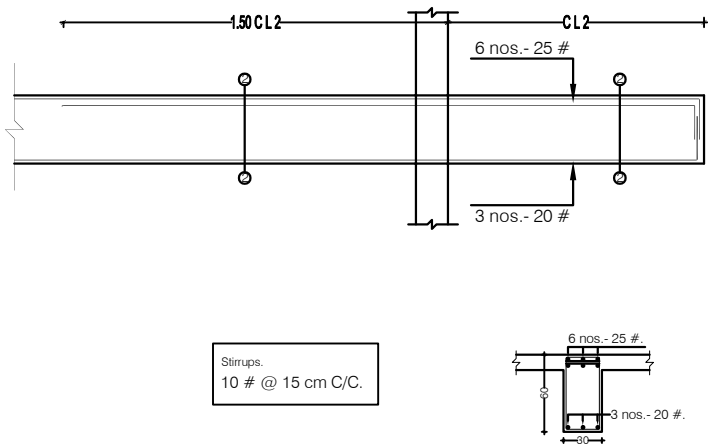


B1 C. - 30 x 70 cm.

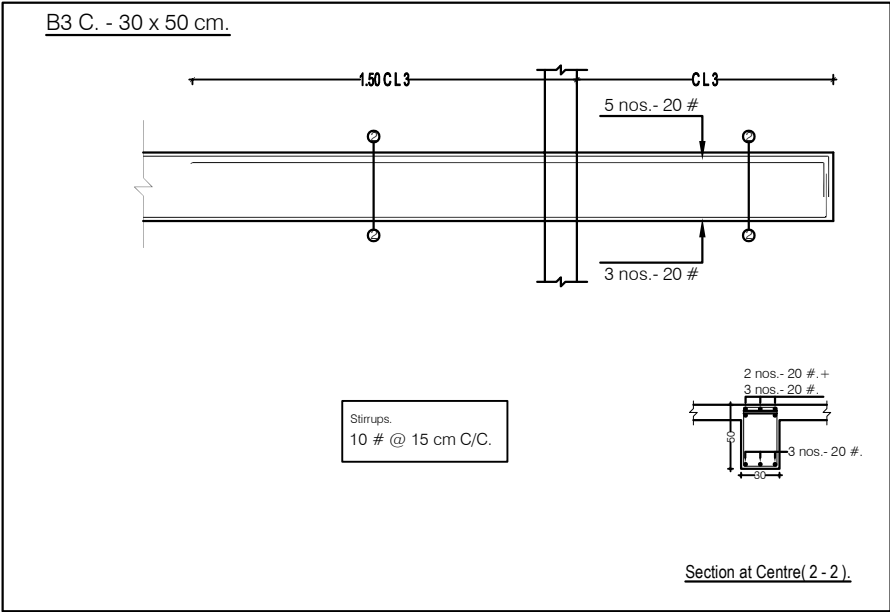


Section at Centre(2 - 2).

B2 C. - 30 x 60 cm.



Section at Centre(2 - 2).

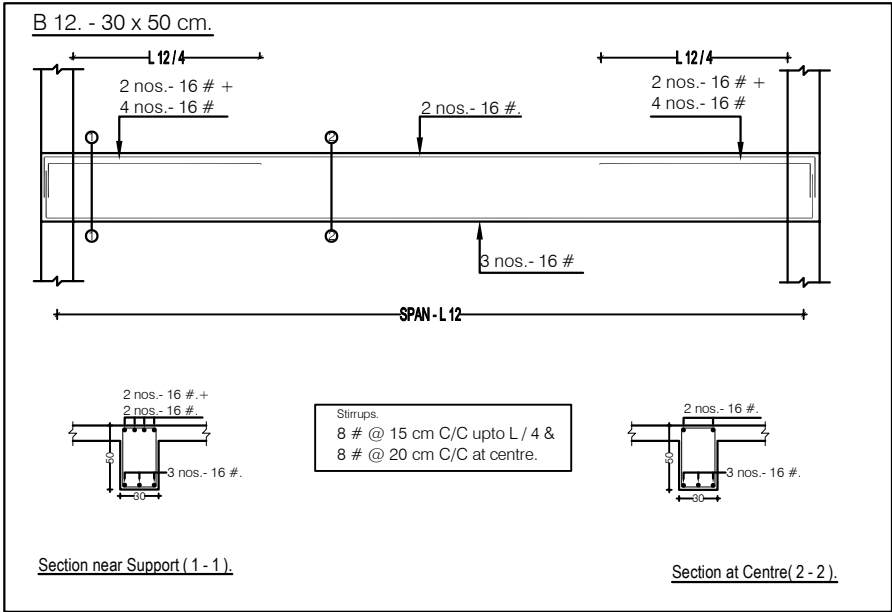
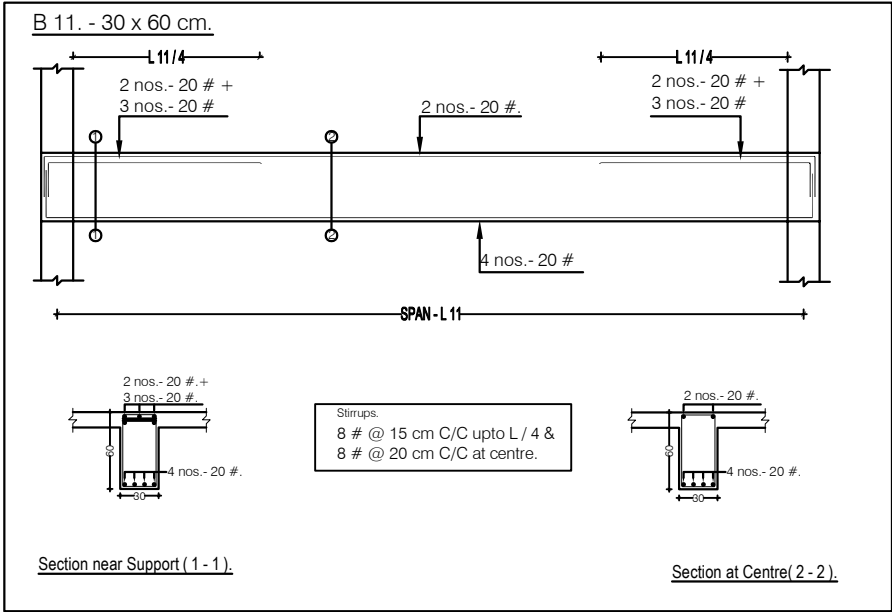


Structural drawing

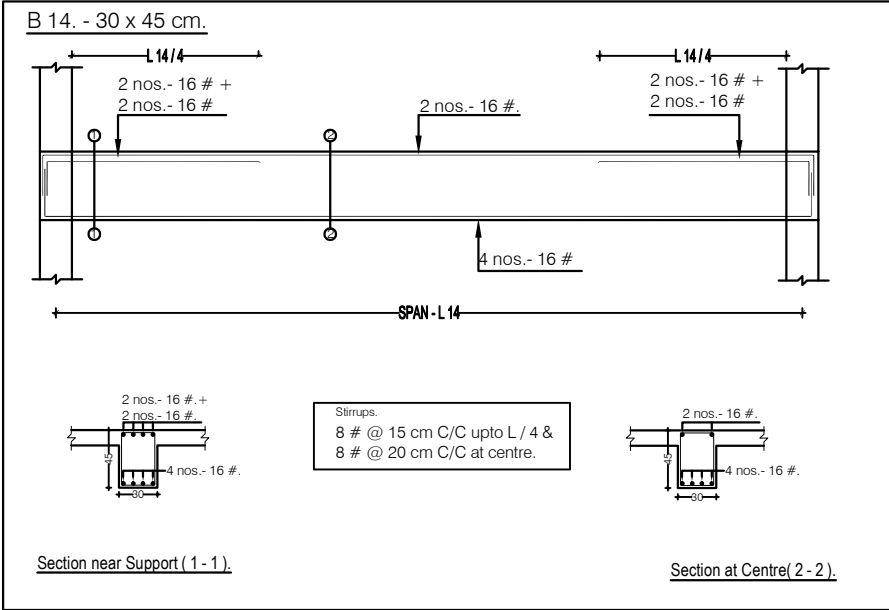
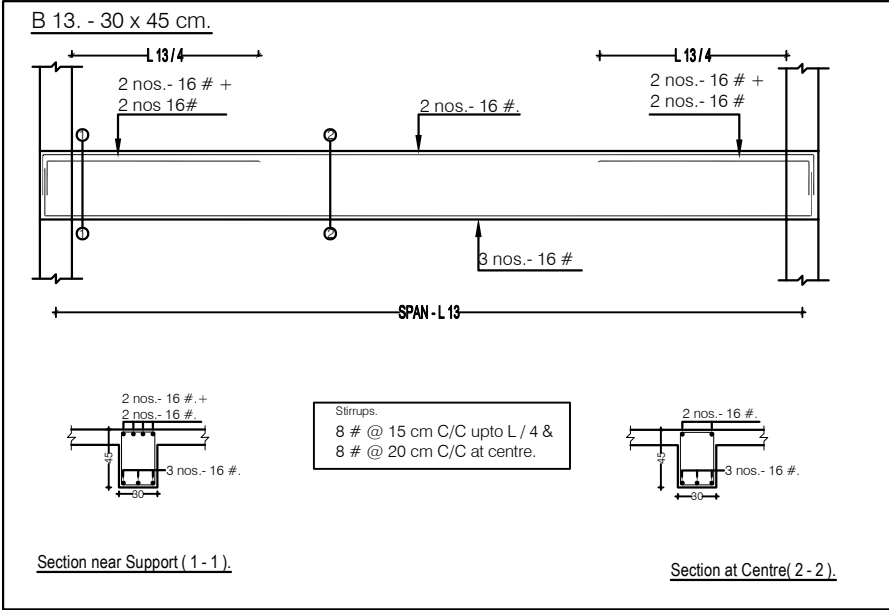
Architectural Consultant
V.R.Baburaj

CLIENT

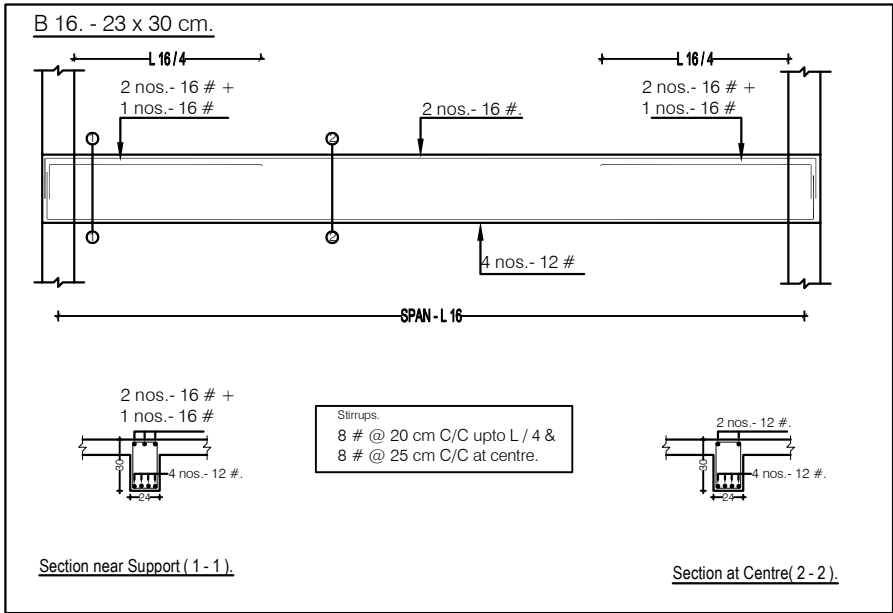
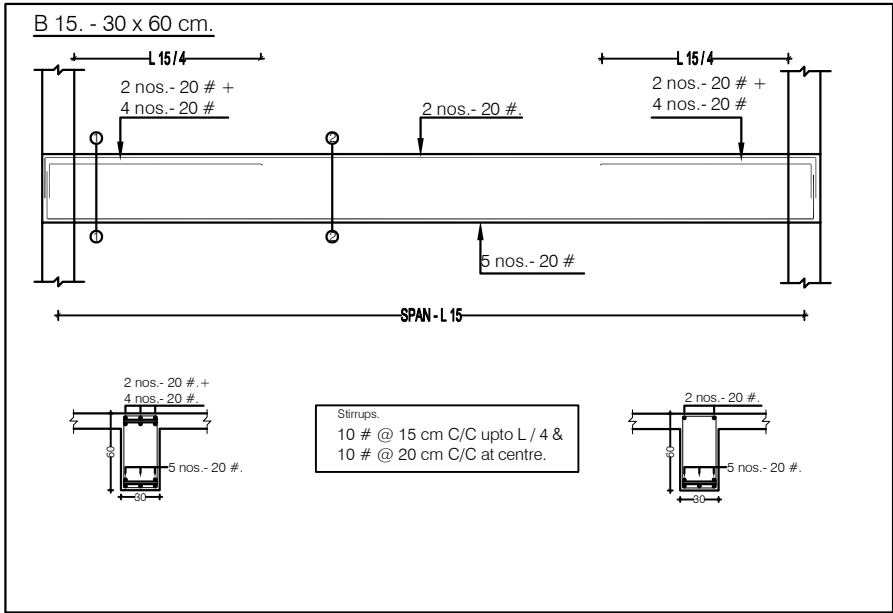
CONSULTANTS
ABHILASH ARCHITECTS
Near Art Of Living Ashramam
Thoppilkadavu, Kollam
Kerala, India
Pin- 691012
Tele No: +914742792144



PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



Structural drawing

Architectural Consultant
V.R.Baburaj

CLIENT

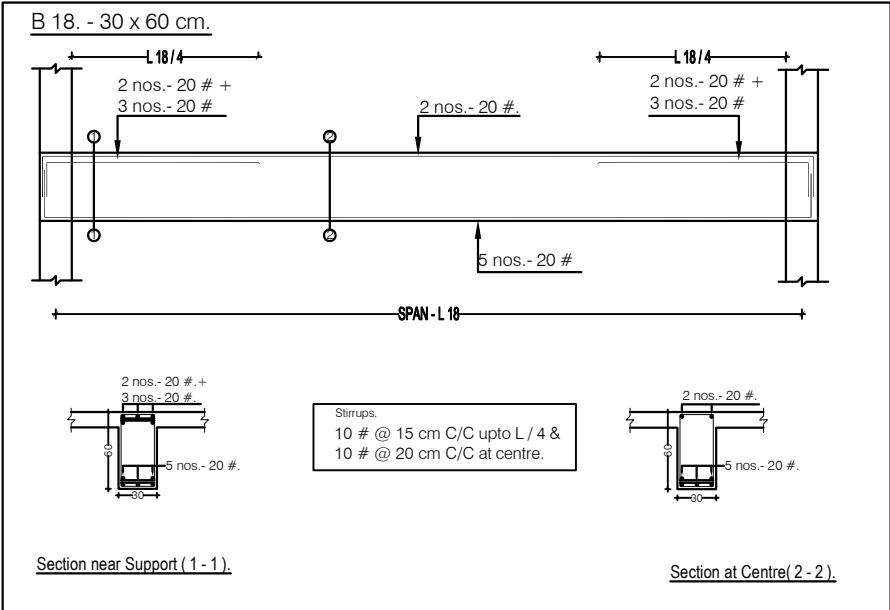
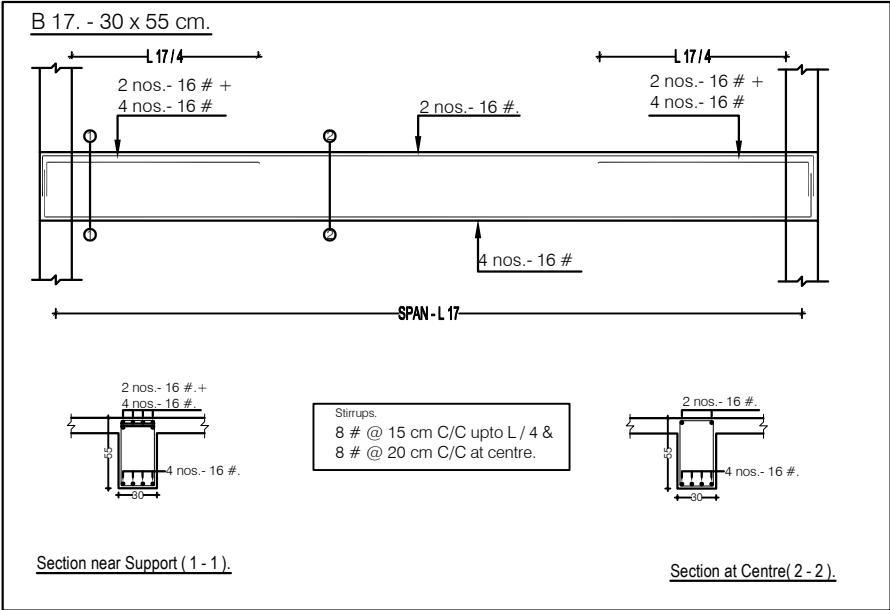
CONSULTANTS
ABHILASH ARCHITECTS
Near Art Of Living Ashramam
Thoppilkadavu, Kollam
Kerala, India
Pin- 691012
Tele No: +914742792144
+914742792134

1/1	TYPE	CHECKED BY	DRAWN BY	DATE
	MEDICAL	MDB	CRG	25/08/2021

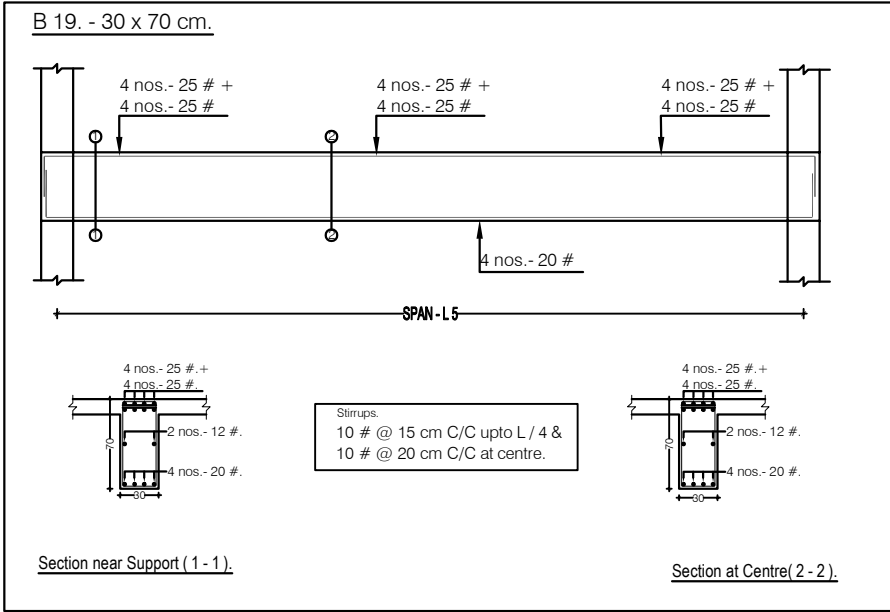
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all dims in centimetres unless specified

ABHILASH ARCHITECTS
ART. PRECISION + ETHICS

PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)

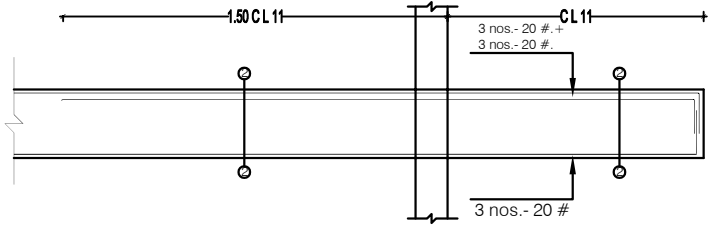


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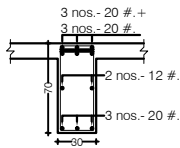




B 11C. - 30 x 70 cm.

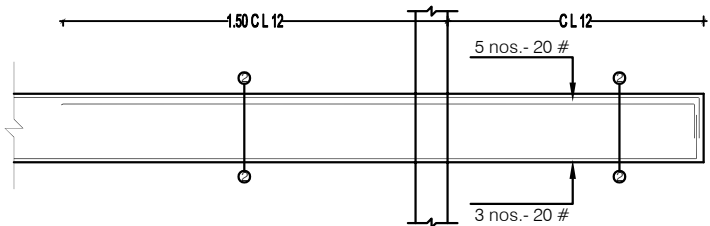


Stirrups.
10 # @ 15 cm C/C.

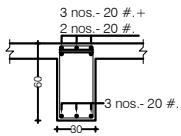


Section at Centre(2 - 2).

B 12C. - 30 x 60 cm.



Stirrups.
10 # @ 15 cm C/C.



Section at Centre(2 - 2).

Structural drawing

Architectural
Consultant

V.R.Baburaj

CLIENT

CONSULTANTS

ABHILASH ARCHITECTS

Near Art Of Living Ashramam
Thoppilkadavu, Kollam
Kerala, India
Pin- 691012

Tele No: +914742792144
+914742792134



ABHILASH ARCHITECTS
ART. PRECISION + ETHICS



TYPE

MEDICAL

CHECKED BY

MDB

DRAWN BY

CRG

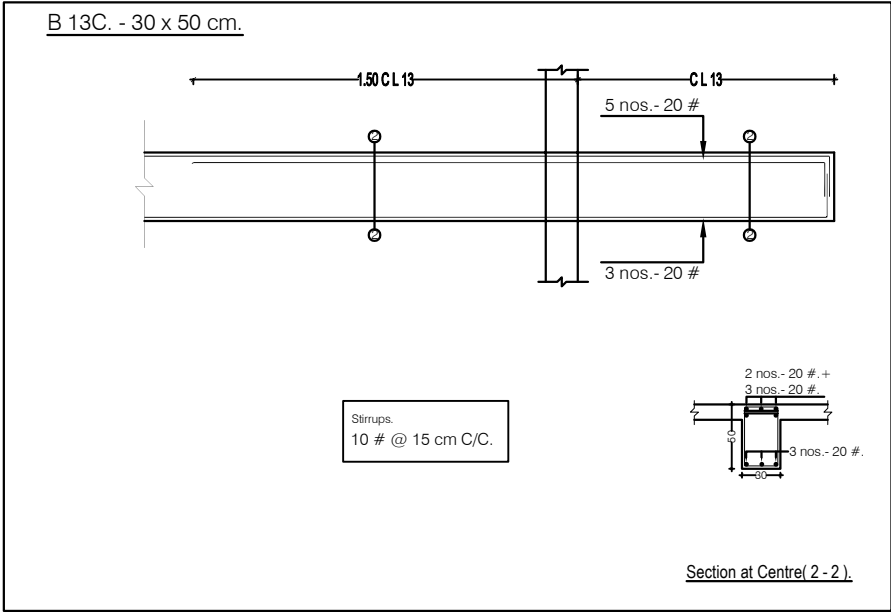
DATE

25/08/2021

SCALE : 1 : 100

all dims in centimetres unless specified

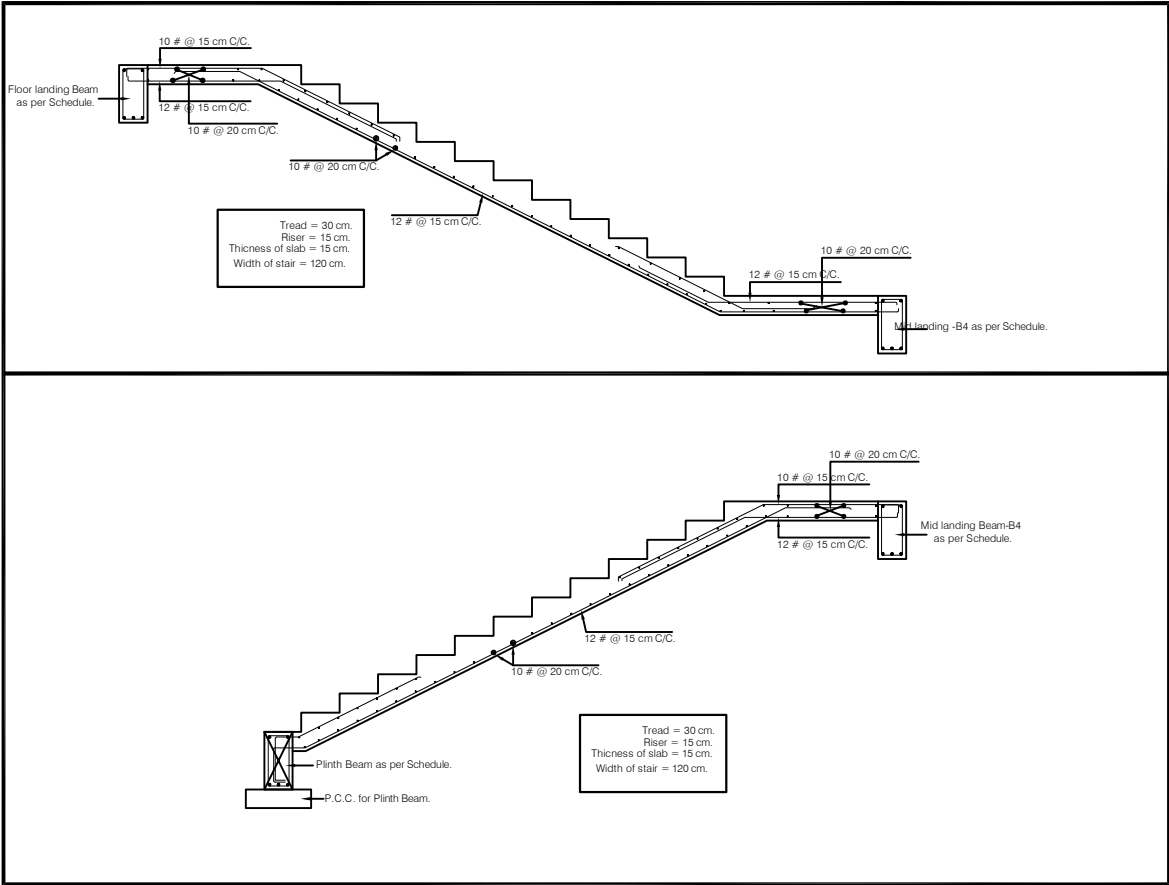
PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



Structural drawing				Architectural Consultant V.R.Baburaj		CLIENT	CONSULTANTS ABHILASH ARCHITECTS Near Art Of Living Ashramam Thoppilkadavu, Kollam Kerala, India Pin- 691012 Tele No: +914742792144 +914742792134
	TYPE MEDICAL	CHECKED BY MDB	DRAWN BY CRG	DATE 25/08/2021	SCALE : 1 : 100 all dims in centimetres unless specified		



PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



Structural drawing

Architectural
Consultant
V.R.Baburaj

CLIENT

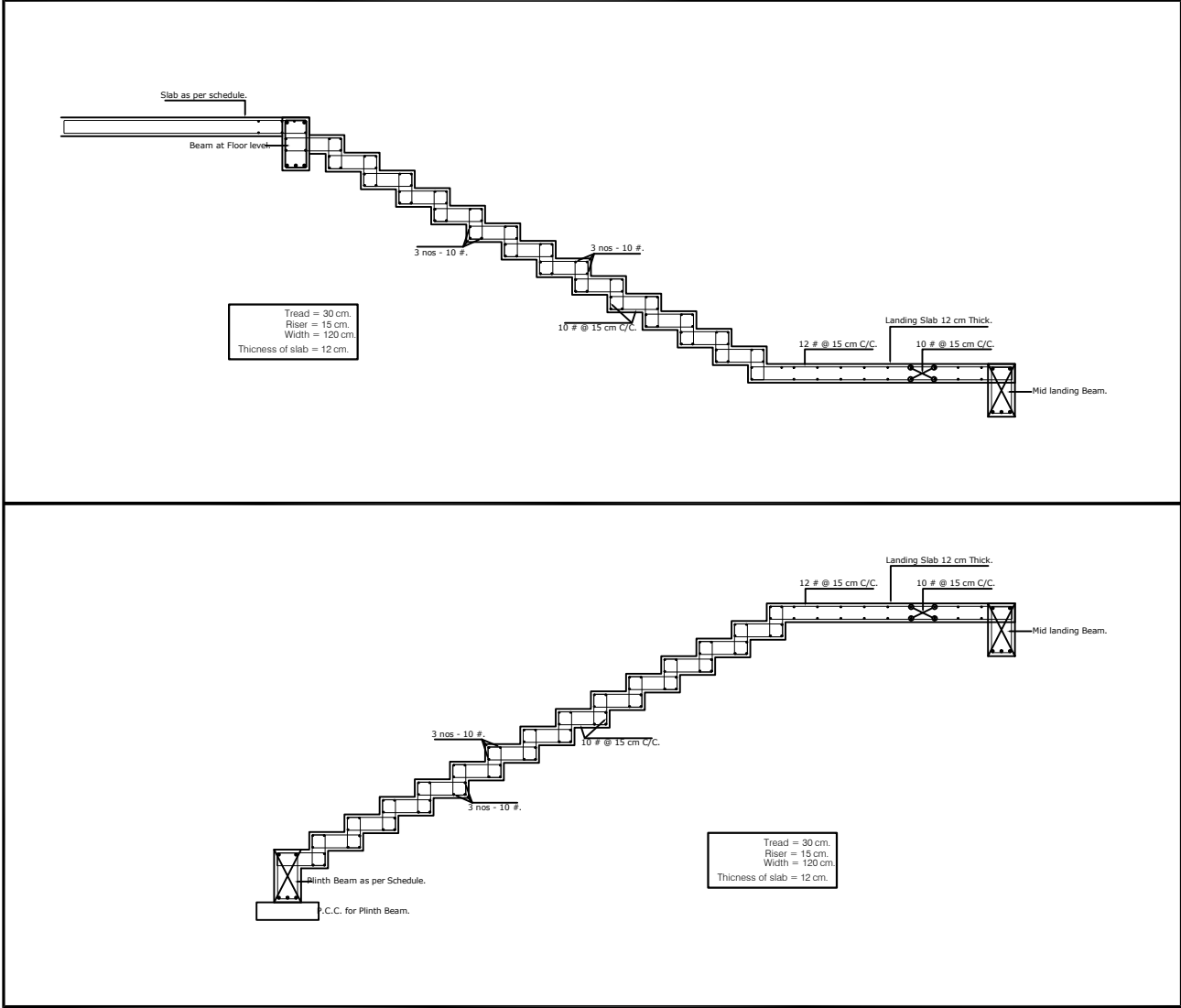
CONSULTANTS
ABHILASH ARCHITECTS
Near Art Of Living Ashramam
Thoppilkadavu, Kollam
Kerala, India
Pin- 691012
Tele No: +914742792144
+914742792134

1 1	TYPE	CHECKED BY	DRAWN BY	DATE
	MEDICAL	MDB	CRG	25/08/2021

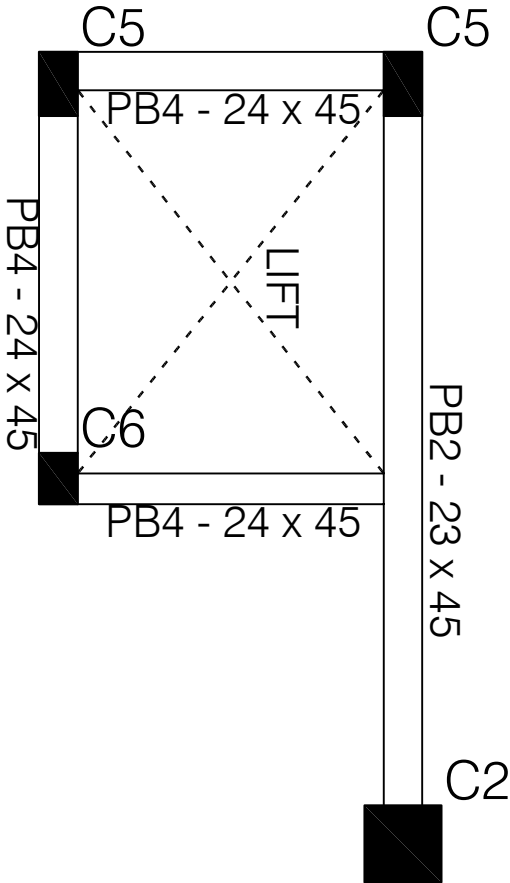
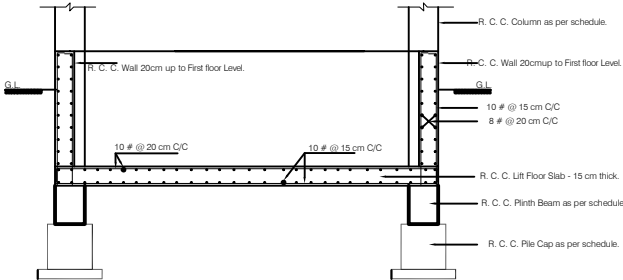
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all dims in centimetres unless specified



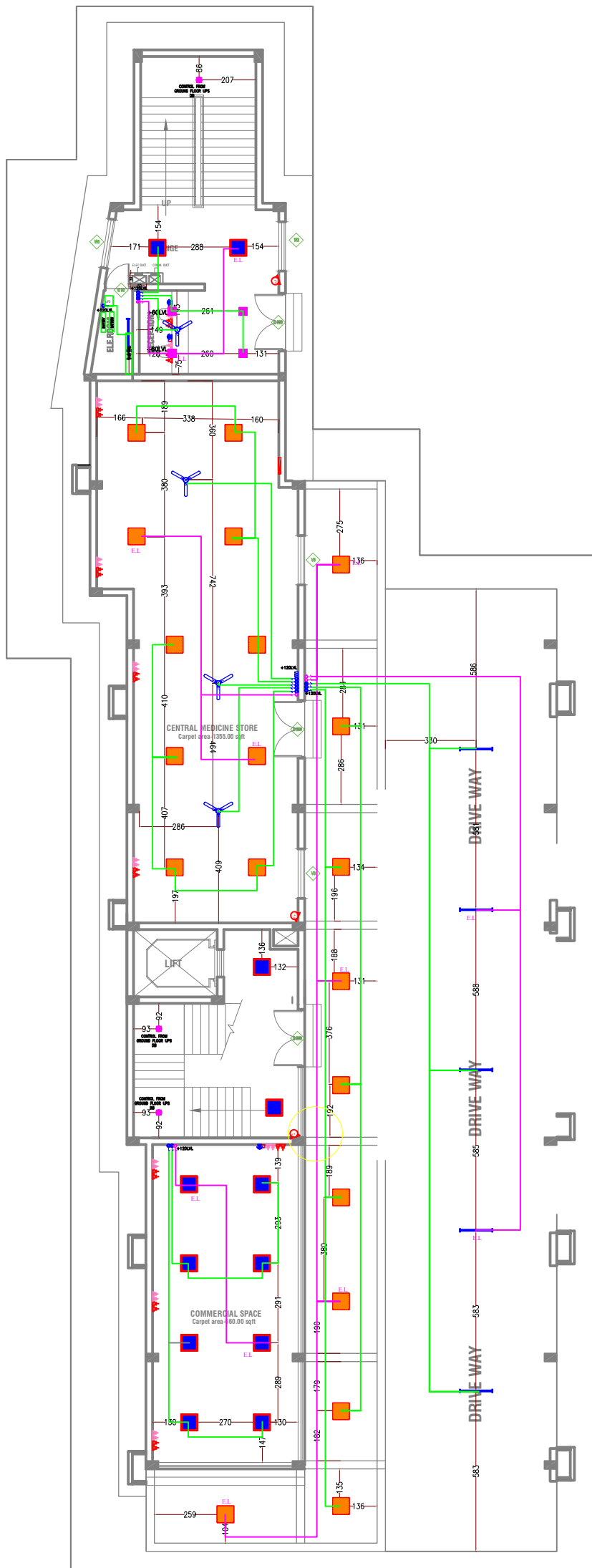
PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



PROPOSED HOSPITAL BUILDING (N.S HOSPITAL , KOLLAM)



MEP DRAWINGS – ELECTRICAL



LEGENDS		
SYMBOL	DESCRIPTION	HEIGHT IN CM (BOTTOM)
	CEILING LIGHT	-
	(1X1)18W CEILING LIGHT	-
	(2X2)27W CEILING LIGHT	-
	MIRROR LIGHT	200
	(2X2)32W CEILING LIGHT	-
	CEILING FAN (1200 MM SWEEP)	-
	CEILING FAN (900 MM SWEEP)	-
	EXHAUST FAN	-
	6A TWO WAY SWITCH	60/120
	6A SWITCH	60/120
	6A SWITCH(UPS)	60/120
	DB	150
	6A SWITCH SOCKET	60/120
	16A SWITCH SOCKET	110
	6A SWITCH SOCKET(UPS)	60/120
	TV SOCKET	180
	20A SWITCH	60/120
	A/C INDOOR UNIT	-
	A/C OUTDOOR UNIT	-
	TELEPHONE POINT	60
	COMPUTER POINT	60

ISSUED FOR: **TENDER DRAWINGS**

REV	DESCRIPTIONS	DATE
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PROJECT:
N.S.MEMORIAL INSTITUTE OF MEDICAL SCIENCE

CLIENT:
N.S.MEMORIAL INSTITUTE OF MEDICAL SCIENCE

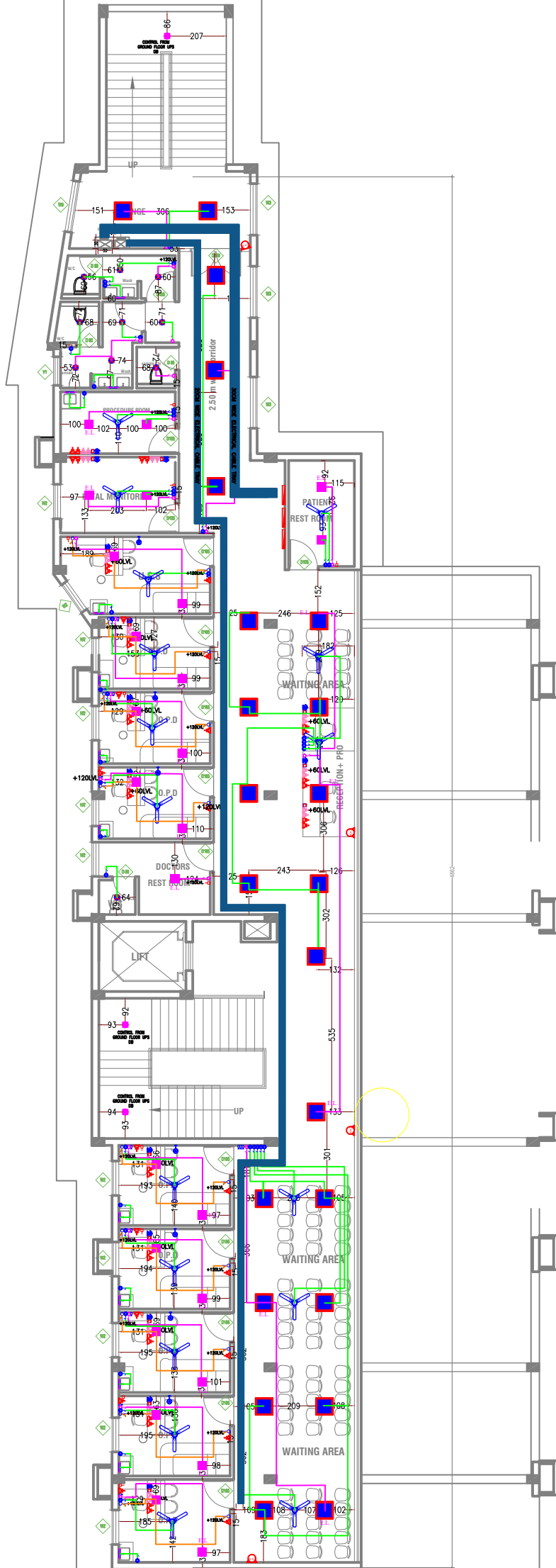
ARCHITECTS:
ABHILASH GROUP
CIVIL ARCHITECTURAL
& INTERIOR CONSULTANT
THOPPLAKADAVU KOLLAM
PHONE: 9847272144
www.abhilashgroup.com

Building Services (MEP) Consultants

BHAVANI CONSULTANTS
31/1342 D, Lal Salam Road, Ponnuruni
Vytilla, P.O. Cochin- 682 019 Kerala.
Ph: +91484 - 4060404, 4010111
Email : design@bhavaniconsultants.com

TITLE :
GF LIGHTING LAYOUT

DATE : 23.09.2021	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.
DRAWN : PRIYANKA	
CHECKED : ANFIYA	DRAWING NO.: 1789/EL-2.1
APPROVED : AD	PROJECT NO.: BH/NSH-1789
SCALE : NTS IN A3	REVISION : R0



LEGENDS		
SYMBOL	DESCRIPTION	HEIGHT IN CM (BOTTOM)
	CEILING LIGHT	-
	(1X1)18W CEILING LIGHT	-
	(2X2)27W CEILING LIGHT	-
	MIRROR LIGHT	200
	(2X2)32W CEILING LIGHT	-
	CEILING FAN (1200 MM SWEEP)	-
	CEILING FAN (900 MM SWEEP)	-
	EXHAUST FAN	-
	6A TWO WAY SWITCH	60/120
	6A SWITCH	60/120
	6A SWITCH(UPS)	60/120
	DB	150
	6A SWITCH SOCKET	60/120
	16A SWITCH SOCKET	110
	6A SWITCH SOCKET(UPS)	60/120
	TV SOCKET	180
	20A SWITCH	60/120
	A/C INDOOR UNIT	-
	A/C OUTDOOR UNIT	-
	TELEPHONE POINT	60
	COMPUTER POINT	60

ISSUED FOR: **TENDER DRAWINGS**

REV	DESCRIPTIONS	DATE
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PROJECT:
N.S.MEMORIAL INSTITUTE OF MEDICAL SCIENCE

CLIENT:
N.S.MEMORIAL INSTITUTE OF MEDICAL SCIENCE

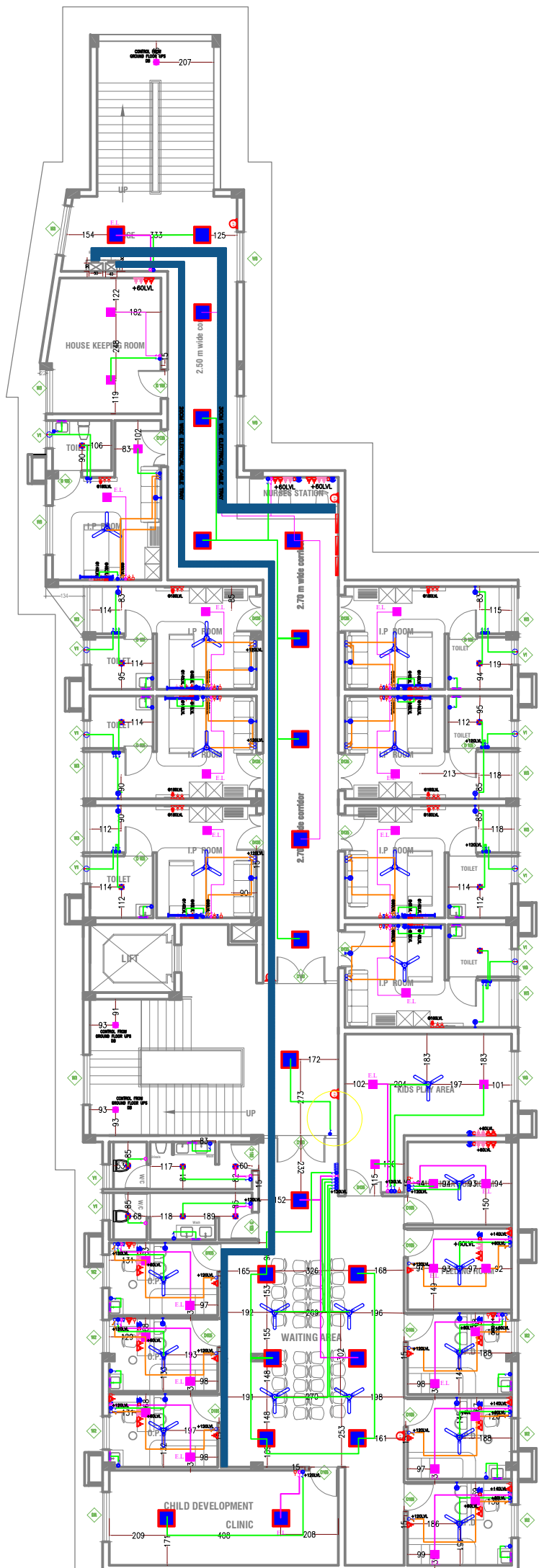
ARCHITECTS:
ABHILASH GROUP
CIVIL ARCHITECTURAL
& INTERIOR CONSULTANT
THOPPIKADAVU KOLLAM
PHONE: 9474 232144
www.abhilashgroup.com

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BHAVANI CONSULTANTS
31/1342 D, Lal Salam Road, Ponnurulli
Vytilla, PO, Cochin- 682 019 Kerala.
Ph: +91484 - 436404, 4010111
Email: design@bhavaniconsultants.com

TITLE :
FF LIGHTING LAYOUT

DATE : 23.09.2021	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.
DRAWN : PRIYANKA	
CHECKED : ANFIYA	DRAWING NO.: 1789/EL-2.2
APPROVED : AD	PROJECT NO.: BH/NSH-1789
SCALE : NTS IN A3	REVISION : R0



LEGENDS		
SYMBOL	DESCRIPTION	HEIGHT IN CM (BOTTOM)
	CEILING LIGHT	-
	(1X1)18W CEILING LIGHT	-
	(2X2)27W CEILING LIGHT	-
	MIRROR LIGHT	200
	(2X2)32W CEILING LIGHT	-
	CEILING FAN (1200 MM SWEEP)	-
	CEILING FAN (900 MM SWEEP)	-
	EXHAUST FAN	-
	6A TWO WAY SWITCH	60/120
	6A SWITCH	60/120
	6A SWITCH(UPS)	60/120
	DB	150
	6A SWITCH SOCKET	60/120
	16A SWITCH SOCKET	110
	6A SWITCH SOCKET(UPS)	60/120
	TV SOCKET	180
	20A SWITCH	60/120
	A/C INDOOR UNIT	-
	A/C OUTDOOR UNIT	-
	TELEPHONE POINT	60
	COMPUTER POINT	60

ISSUED FOR: **TENDER DRAWINGS**

REV	DESCRIPTIONS	DATE
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PROJECT:
N.S.MEMORIAL INSTITUTE OF MEDICAL SCIENCE

CLIENT:
N.S.MEMORIAL INSTITUTE OF MEDICAL SCIENCE

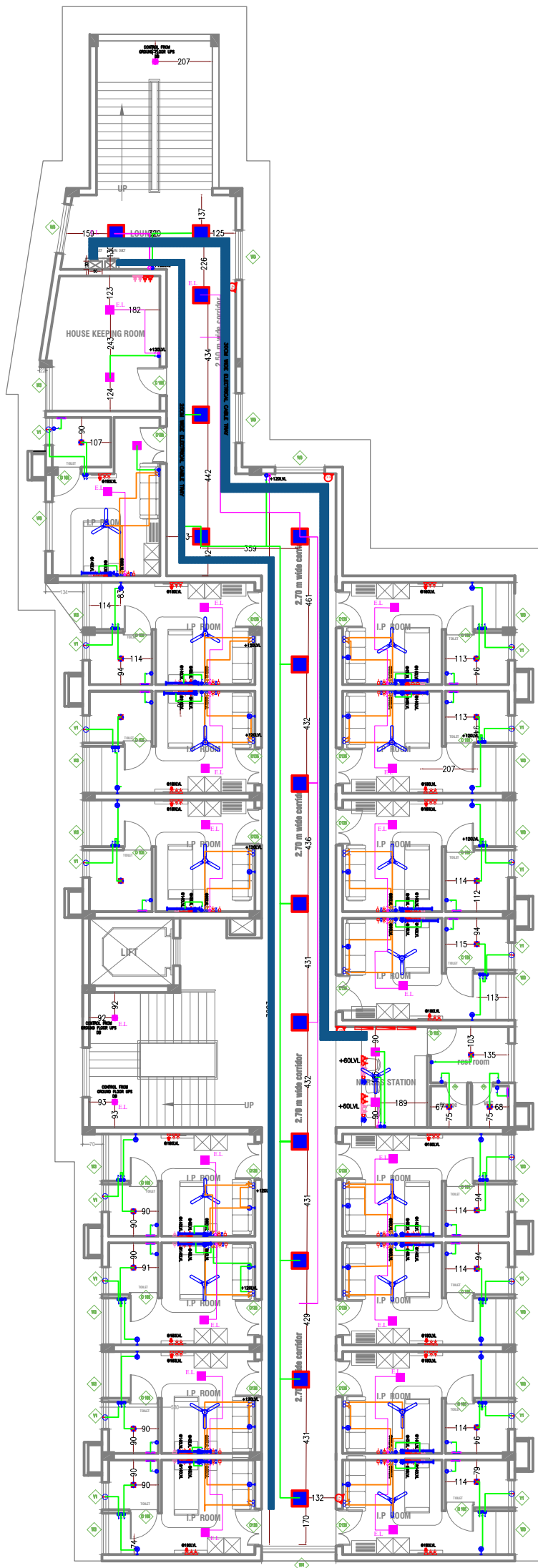
ARCHITECTS:
ABHILASH GROUP
CIVIL ARCHITECTURAL
& INTERIOR CONSULTANT
THOPPIKADAVU KOLLAM
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www.abhilashgroup.com

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BHAVANI CONSULTANTS
31/1342 D, Lal Salam Road, Ponnurummi
Vytilla, PO, Cochin- 682 019 Kerala.
Ph: +91 484 - 4360404, 4010111
Email: design@bhavaniconsultants.com

TITLE :
SF LIGHTING LAYOUT

DATE : 23.09.2021	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.
DRAWN : PRIYANKA	
CHECKED : ANFIYA	DRAWING NO.: 1789/EL-2.3
APPROVED : AD	PROJECT NO.: BH/NSH-1789
SCALE : NTS IN A3	REVISION : R0



LEGENDS		
SYMBOL	DESCRIPTION	HEIGHT IN CM (BOTTOM)
	CEILING LIGHT	-
	(1X1)18W CEILING LIGHT	-
	(2X2)27W CEILING LIGHT	-
	MIRROR LIGHT	200
	(2X2)32W CEILING LIGHT	-
	CEILING FAN (1200 MM SWEEP)	-
	CEILING FAN (900 MM SWEEP)	-
	EXHAUST FAN	-
	6A TWO WAY SWITCH	60/120
	6A SWITCH	60/120
	6A SWITCH(UPS)	60/120
	DB	150
	6A SWITCH SOCKET	60/120
	16A SWITCH SOCKET	110
	6A SWITCH SOCKET(UPS)	60/120
	TV SOCKET	180
	20A SWITCH	60/120
	A/C INDOOR UNIT	-
	A/C OUTDOOR UNIT	-
	TELEPHONE POINT	60
	COMPUTER POINT	60

ISSUED FOR: **TENDER DRAWINGS**

REV	DESCRIPTIONS	DATE

PROJECT: **N.S.MEMORIAL INSTITUTE OF MEDICAL SCIENCE**

CLIENT: **N.S.MEMORIAL INSTITUTE OF MEDICAL SCIENCE**

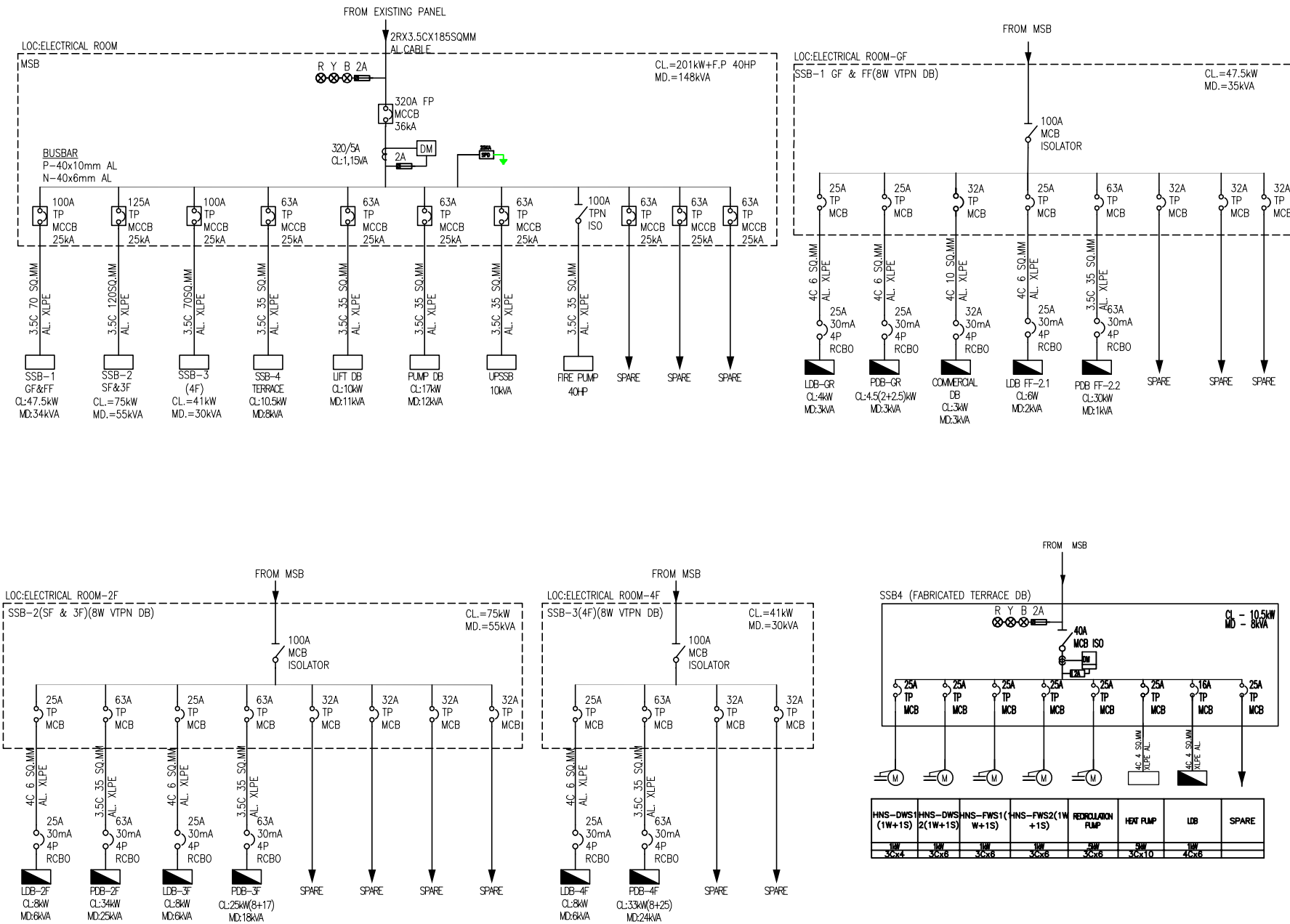
ARCHITECTS: **ABHILASH GROUP**
CIVIL ARCHITECTURAL
& INTERIOR CONSULTANT
THOPPIKADAVU KOLLAM
PHONE: 9447232144
www.abhilashgroup.com

Building Services (MEP) Consultants

BHAVANI CONSULTANTS
31/1342 D, Lal Salam Road, Porurunnal
Villila, PO, Cochin- 682 019 Kerala.
Ph: +91484 - 436404, 4010111
Email: design@bhavaniconsultants.com

TITLE : **TF & FF LIGHTING LAYOUT**

DATE : 23.09.2021	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.
DRAWN : PRIYANKA	DRAWING NO.: 1789/EL-2.4
CHECKED : ANFIYA	PROJECT NO.: BH/NSH-1789
APPROVED : AD	REVISION : RO
SCALE : NTS IN A3	



PROJECT:
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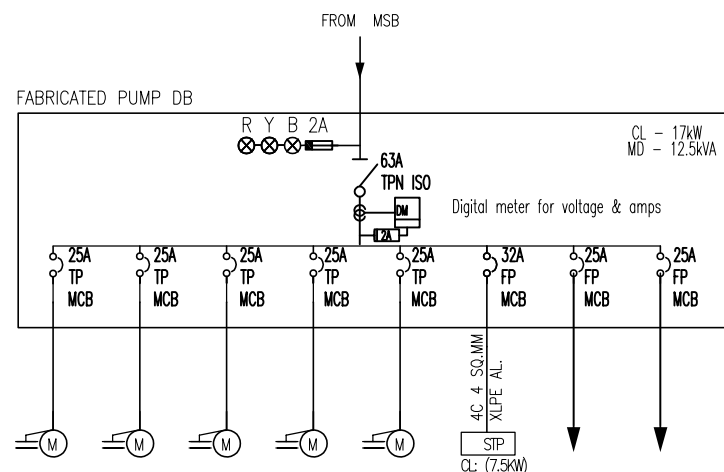
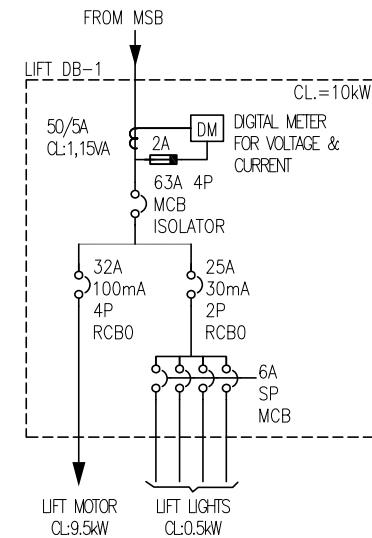
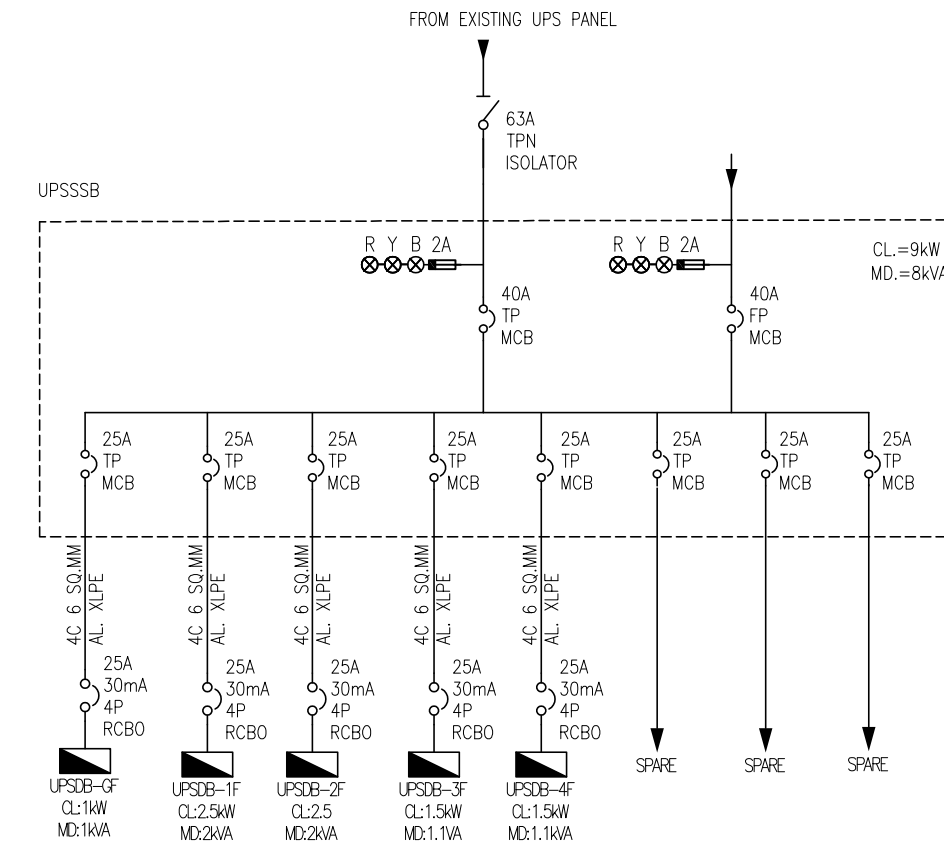
ARCHITECTS:
ABHILASH GROUP
CIVIL ARCHITECTURAL & INTERIOR CONSULTANT
THOPIKADAVU KOLLAM
PHONE: 94474 318144
Email: design@abhilashgroup.com

Building Services (MEP) Consultants

BHAVANI CONSULTANTS
31/1342 D. Lal Salam Road, Pannurunni
Vythila, P.O. Cochin- 682 019 Kerala.
Ph : +91484 - 4060404 . 4010111
Email : design@bhavaniconsultants.com

TITLE :
ELECTRICAL SCHEME

DATE : 23.09.2021	ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
DRAWN : PRIYANKA	CHECKED : ANFIYA
APPROVED : AD	DRAWING NO.: 1789/EL-1.1
SCALE : NTS	PROJECT NO.: BH/NSH-1789
	REVISION : R0



DTP-1 (1W+1S)	DTP-2(1W+1S)	SEWAGE PUMP-1	SEWAGE PUMP-2	FILTER FEED	STP	SPARE	SPARE
2.2kW 3Cx6	2.2kW 3Cx6	2kW 3Cx6	2kW 3Cx6	1kW 3Cx6	7.5kW (1Rx4Cx10)	--	--

PROJECT:

N.S.MEMORIAL INSTITUTE OF MEDICAL SCIENCE

ARCHITECTS:

ABHILASH GROUP
CIVIL ARCHITECTURAL
& INTERIOR CONSULTANT
THOPPIKADAVU KOLLAM
PHONE: 9447427824
www.abhilashgroup.com

Building Services (MEP) Consultants

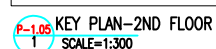
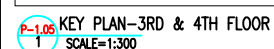
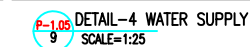
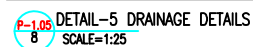
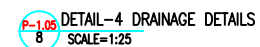
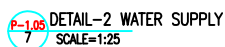
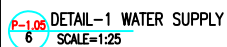
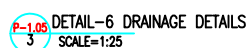
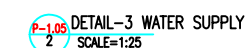
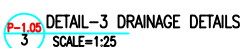
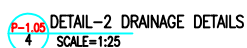
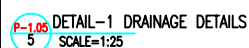
BHAVANI CONSULTANTS
31/1342 D, Lal Salam Road, Ponnuruni
Vythila, PO, Cochin- 682 019 Kerala.
Ph : +91484 - 4060404 , 4010111
Email : design@bhavaniconsultants.com


TITLE :

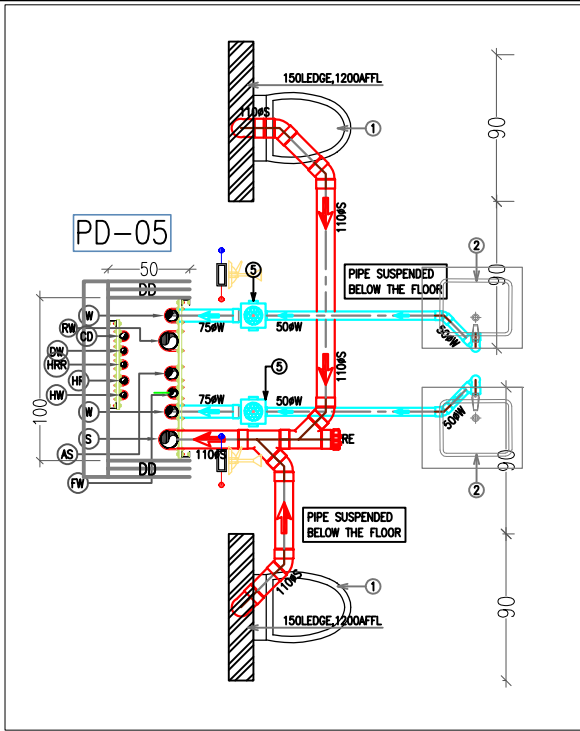
ELECTRICAL SCHEME

DATE : 23.09.2021	ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
DRAWN : PRIYANKA	
CHECKED : ANFIYA	DRAWING NO.: 1789/EL-1.2
APPROVED : AD	PROJECT NO.: BH/NSH-1789
SCALE : NTS	REVISION : R0

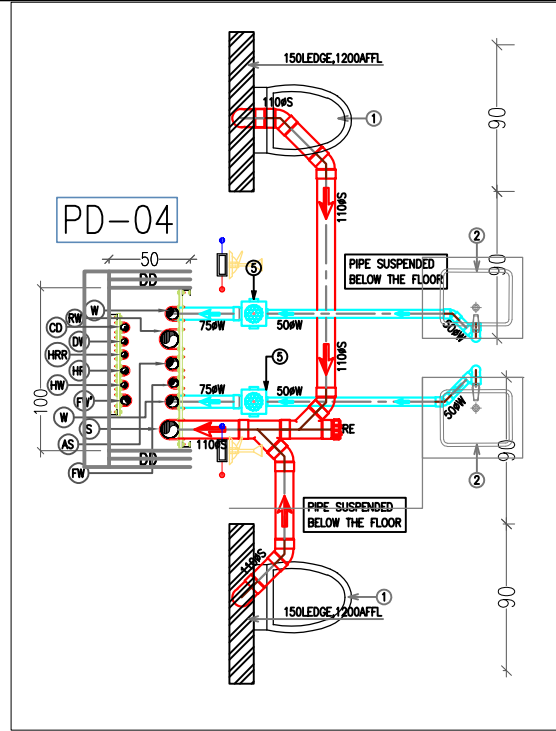
MEP DRAWINGS – PLUMBING



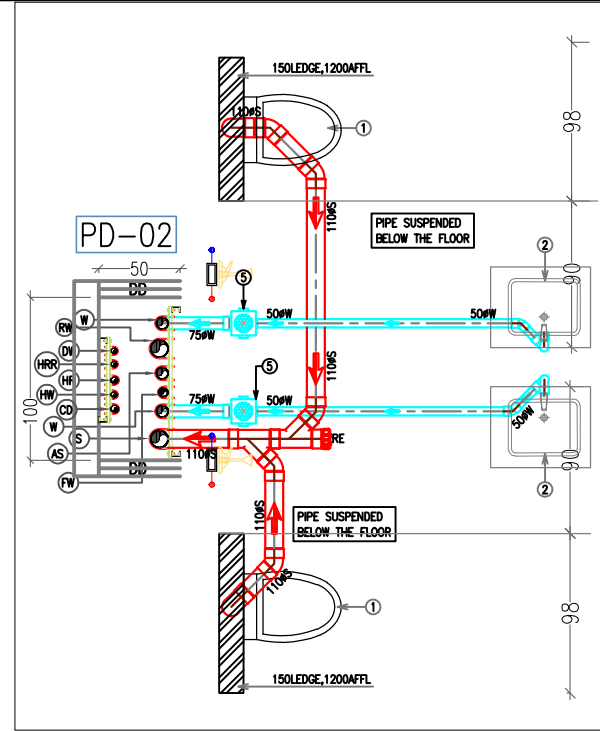
ISSUED FOR: REFERENCE ONLY			PROJECT: NS HOSPITAL		Building Services (MEP) Consultants  31/1342 D, Lal Solam Road Poruram Nymbe, PO, Coimbatore - 640017, India Ph: +91454-460064, 4600111 Email: design@bhavaniconsultants.com	
			CLIENT:		TITLE :	
			ARCHITECT:		TOILET DETAILS : 2ND, 3RD & 4TH FLOOR	
			ABHILASH ARCHITECTS PLOT NO. 10 CMLA INDUSTRIAL ESTATE & WATER CONDUIT NORTH SANGLI SANGLI DISTRICT: ABHIMANYU www.abhilasharch.com		DATE : 23.09.2021 DRAWN : SS CHECKED : SS APPROVED / APPROVED SCALE : 1:250/300	
REV			DESCRIPTIONS		ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED. DRAWING NO: 1780-P-01/04 PROJECT NO: BH-158/1780 REVISION : RD SHEET-	
DATE						



P-1.04
4
DETAIL-3 DRAINAGE DETAILS
SCALE=1:25



P-1.04
3
DETAIL-2 DRAINAGE DETAILS
SCALE=1:25



P-1.04
2
DETAIL-1 DRAINAGE DETAILS
SCALE=1:25

DETAIL-1



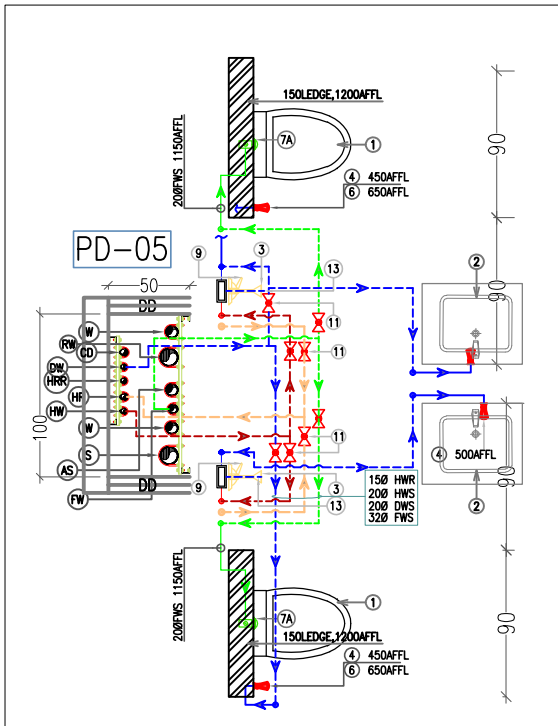
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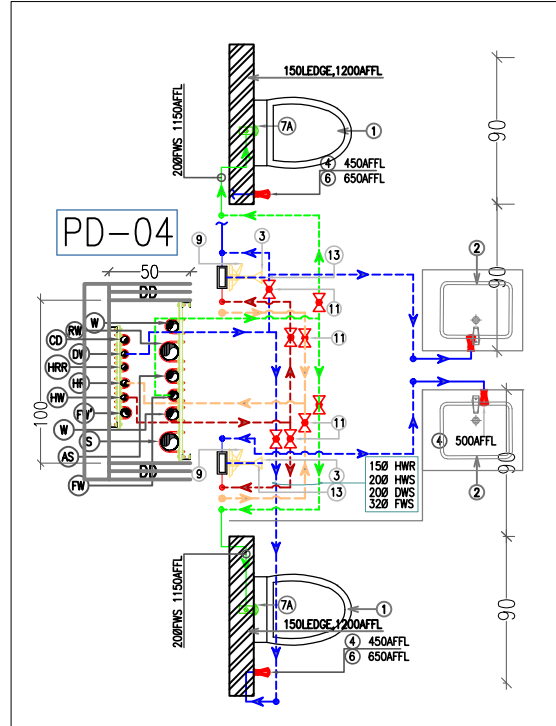
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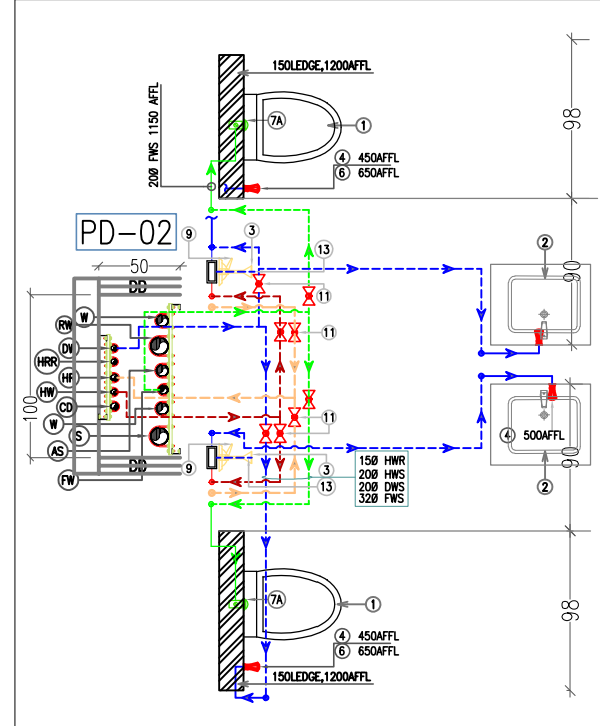
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P-1.04
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DETAIL-3 WATER SUPPLY
SCALE=1:25



P-1.04
6
DETAIL-2 WATER SUPPLY
SCALE=1:25



P-1.04
7
DETAIL-1 WATER SUPPLY
SCALE=1:25

ISSUED FOR:
REFERENCE ONLY

REV	DESCRIPTIONS	DATE

PROJECT:
NS HOSPITAL

CLIENT:

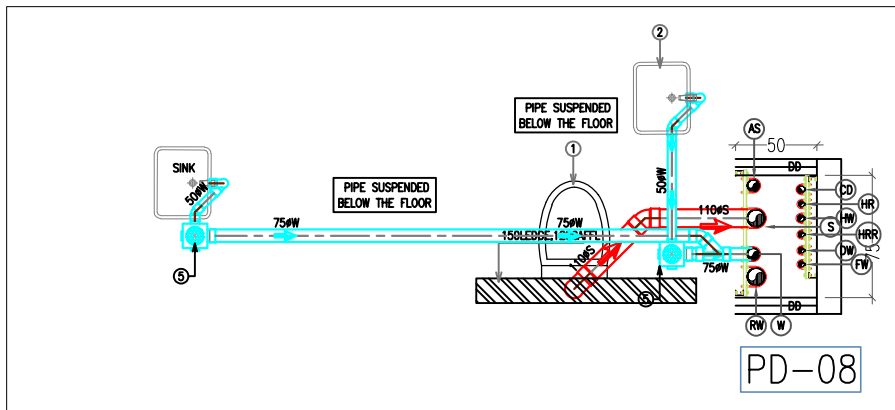
ARCHITECTS:
ABHILASH ARCHITECTS
ART PRECISION & ETHICS
CIVIL ARCHITECTURAL
& INTERIOR CONSULTANT
THIRUPURANGALU
KOLLAM
PHONE: 9447220744
www.abhilasharchitects.com

Building Services (MEP) Consultants

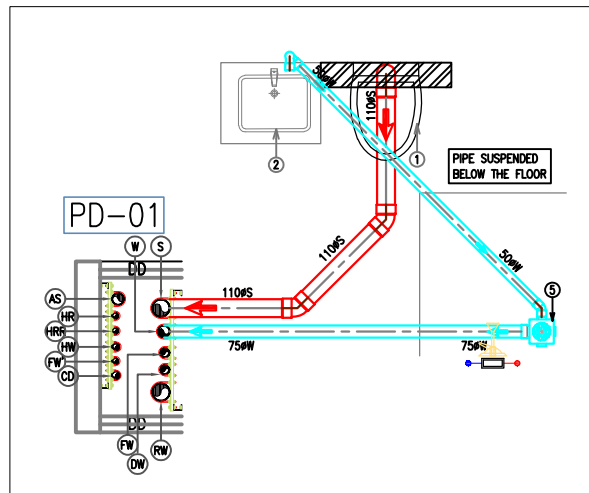
BHAVANI
CONSULTANTS
31/1342 D, Lal Salam Road, Ponnuruthi
Vyttila PO, Cochin-682 019 Kerala.
PH: +91 484 - 450404 - 4010111
Email: design@bhavaniconsultants.com

TITLE :
TOILET DETAILS - 3RD & 4TH FLOOR

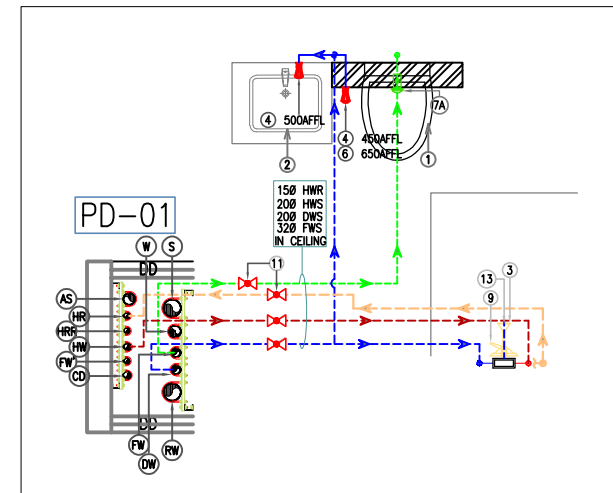
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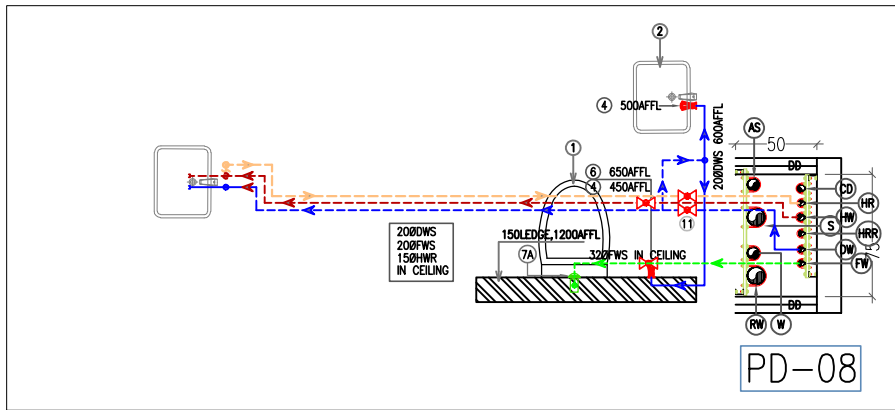
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P-1.03
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DETAIL-1 DRAINAGE DETAILS
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P-1.03
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DETAIL-1 WATER SUPPLY
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P-1.03
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DETAIL-3 WATER SUPPLY
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DETAIL-1



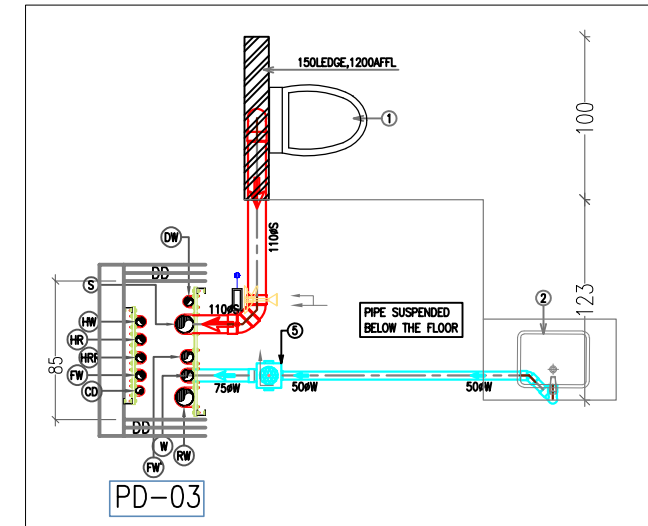
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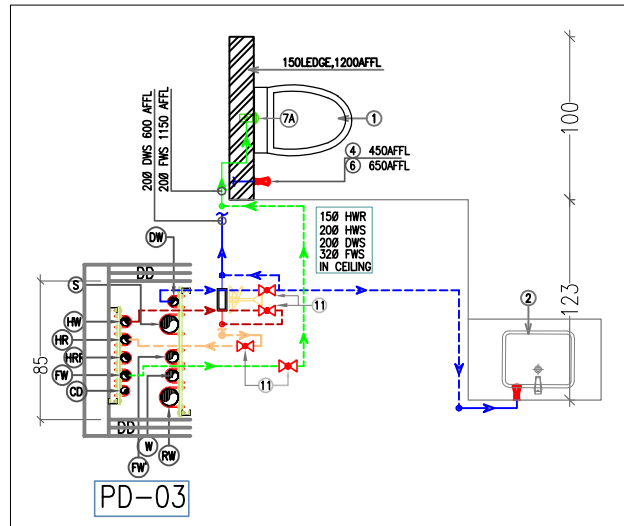
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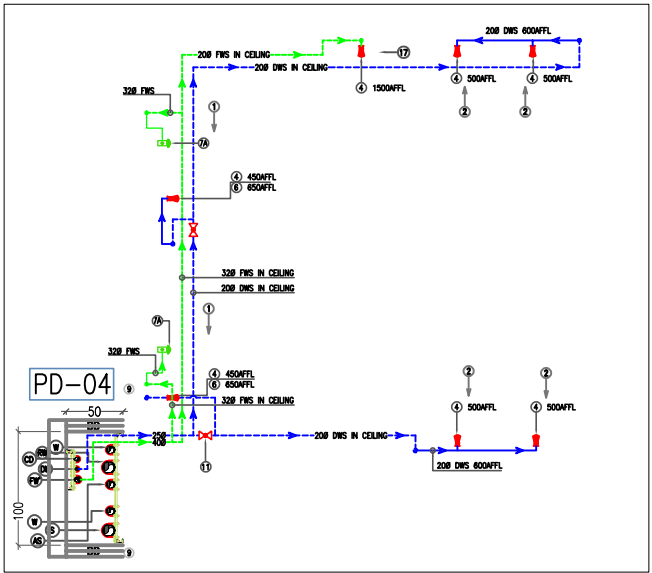


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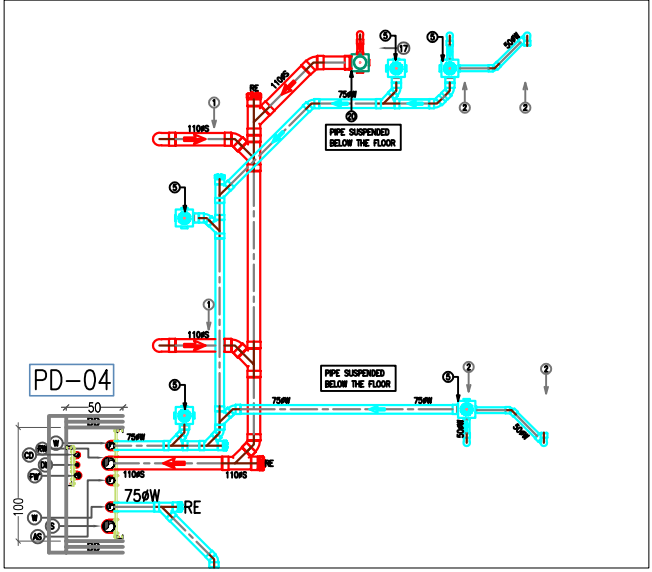


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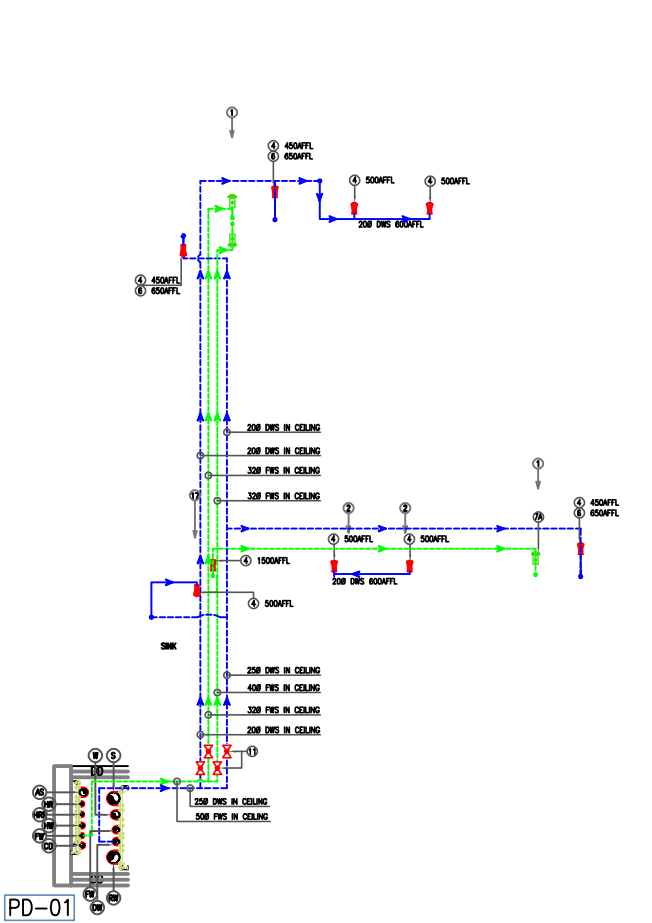
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ABHILASH ARCHITECTS		
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CIVIL ARCHITECTURAL		
& INTERIOR CONSULTANT		
THIRUPURKUDAVU		
KOLLAM		
PHONE: 9447427014		
WWW.ABHILASHARCHITECTS.COM		
Building Services (MEP) Consultants		
BHAVANI CONSULTANTS		
31/1342 D, Lal Salam Road, Ponnuruthi		
Vyttila PO, Cochin-682 019 Kerala.		
Ph: +91-484-4260424 - 4201011		
Email: design@bhavaniconsultants.com		
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TOILET DETAILS - 3RD & 4TH FLOOR		
DATE	: 23.09.2021	ALL DIMENSIONS ARE IN MM
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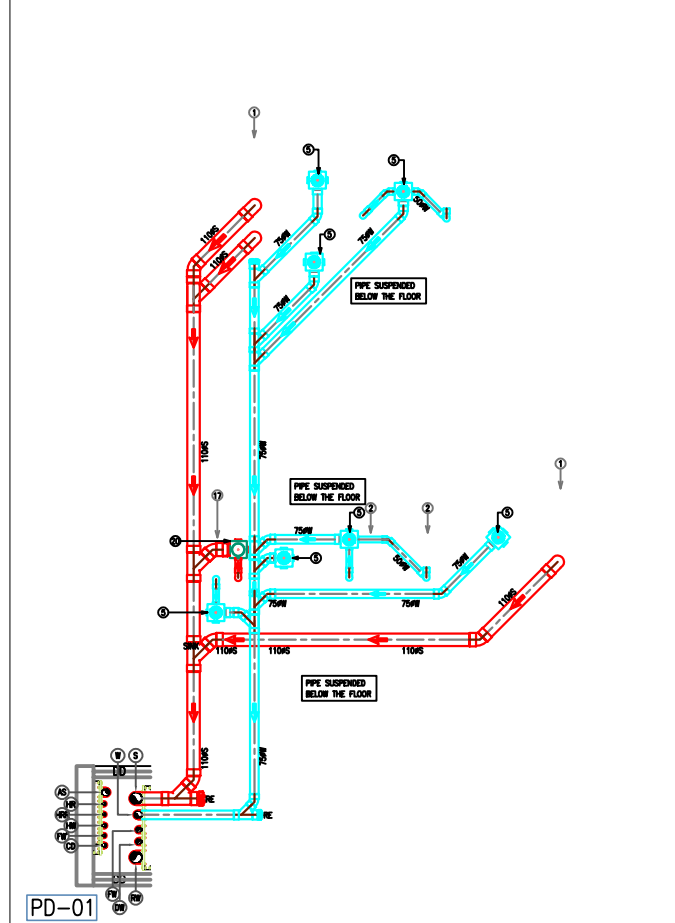
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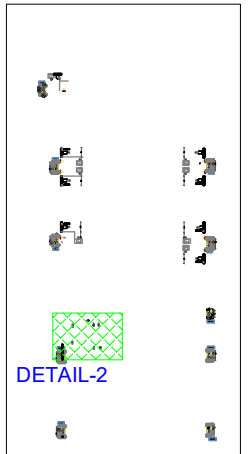
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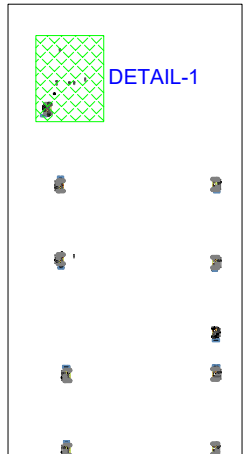
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P-1.02
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DETAIL-1 DRAINAGE DETAILS
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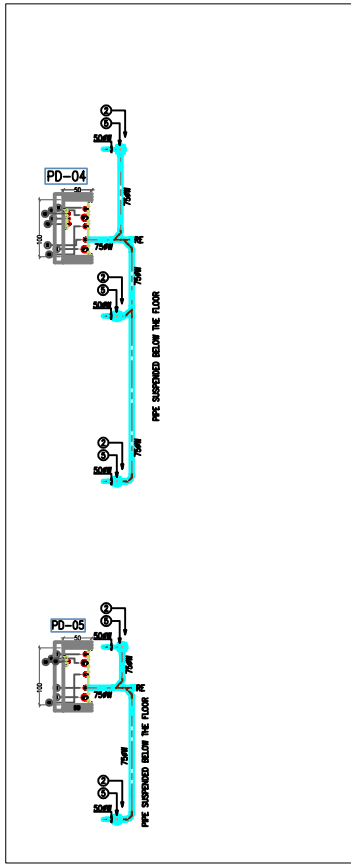


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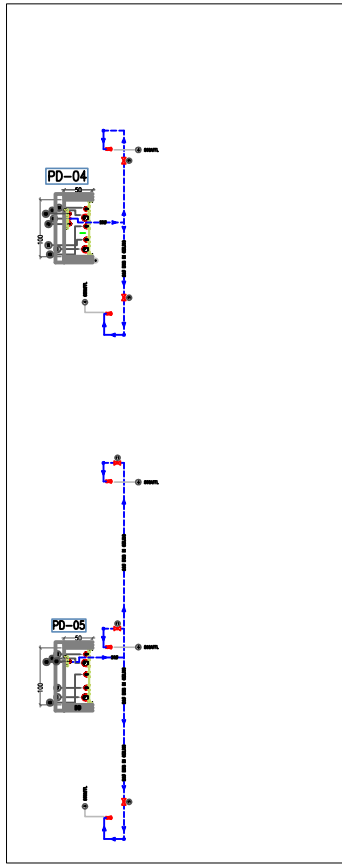


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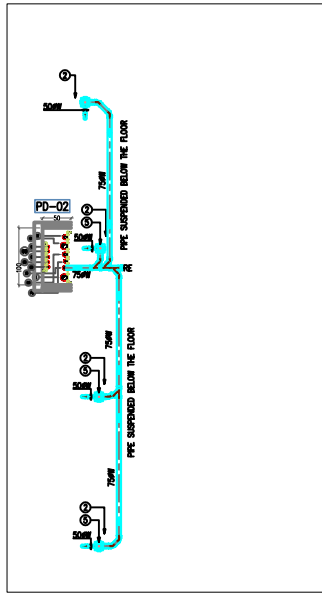
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REV	DESCRIPTIONS	DATE
PROJECT: NS HOSPITAL		
CLIENT:		
ARCHITECTS: ABHILASH ARCHITECTS CIVIL ARCHITECTURAL & INTERIOR CONSULTANT HOBBANGALU BELLURU PUNE, INDIA www.abhilasharchitects.com		
Building Services (MEP) Consultants		
BHAVANI		
31/1340 D, Lal Salem Road, Ponnuram Villupuram, Tamil Nadu 605 019 India Ph: +91 441-480047, 401011 Email: bhavanimep@gmail.com		
TITLE: TOILET DETAILS - FIRST & SECOND FLOOR		
DATE: 23.08.2021	ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.	
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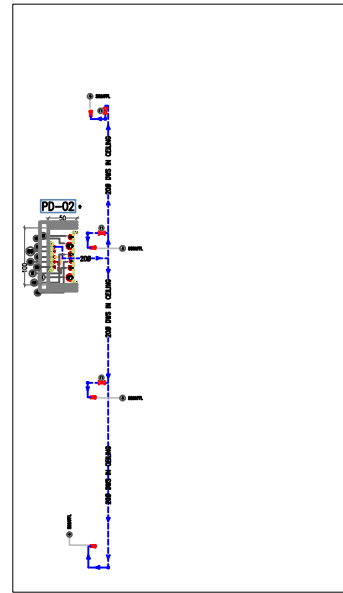
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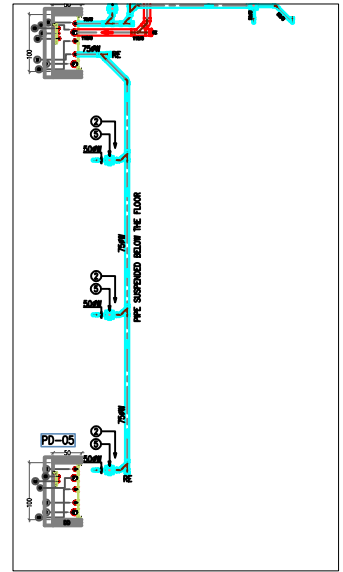
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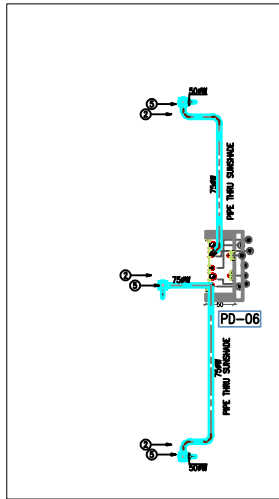
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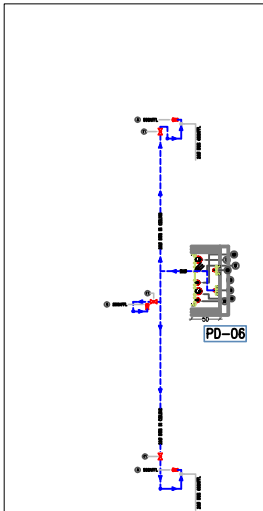
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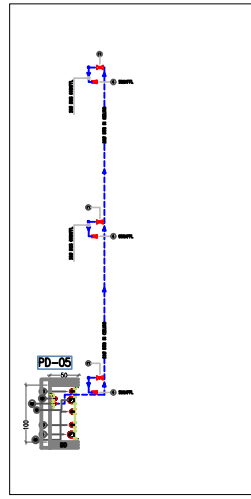
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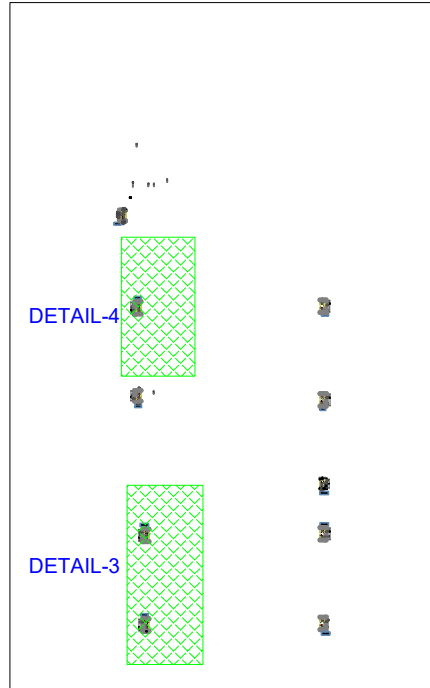
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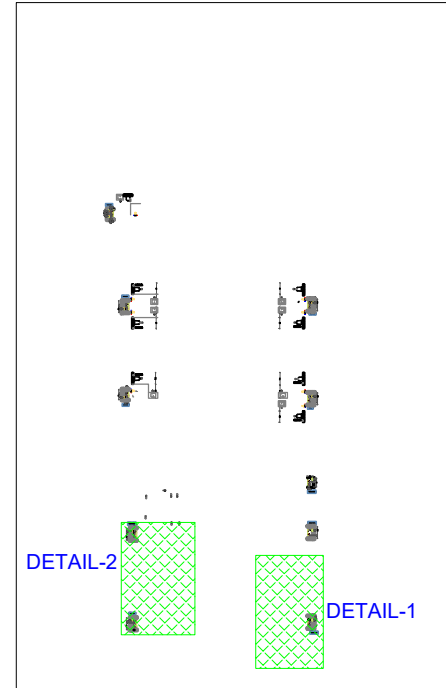
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P-1.01
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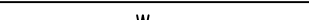




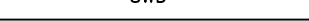




















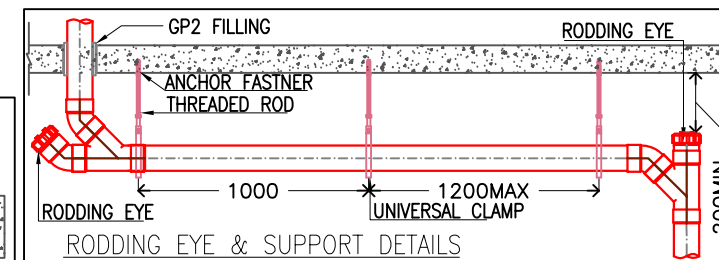
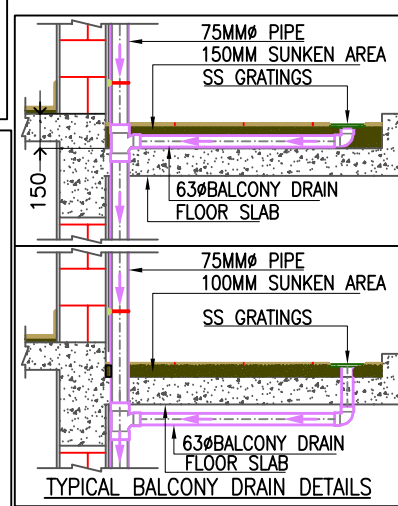
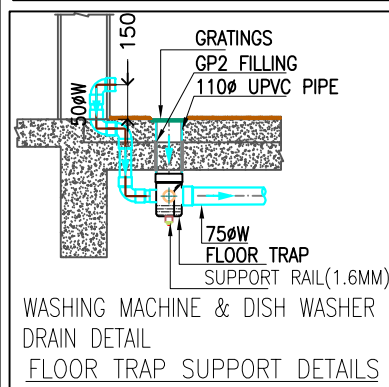
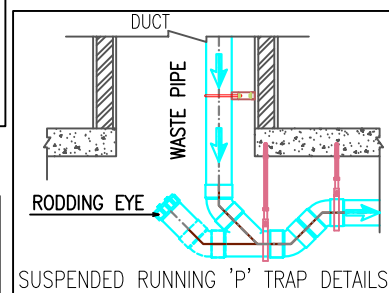
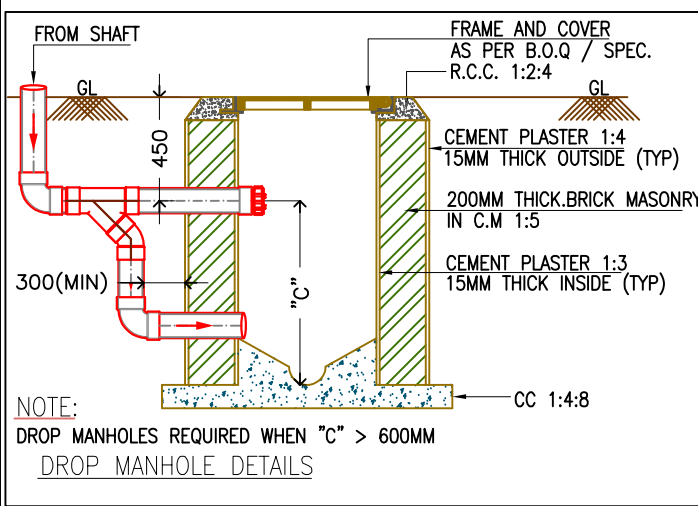
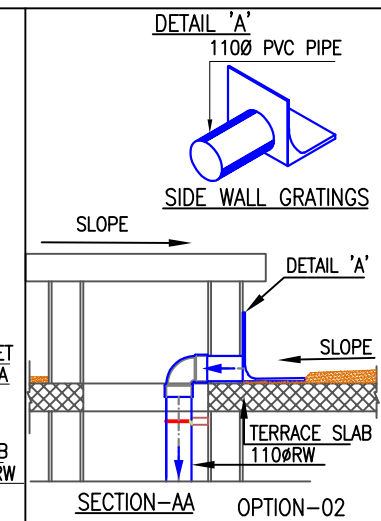
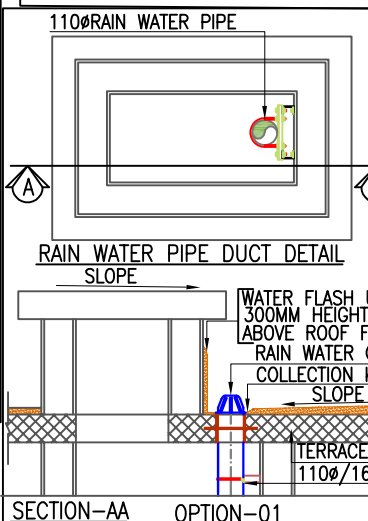
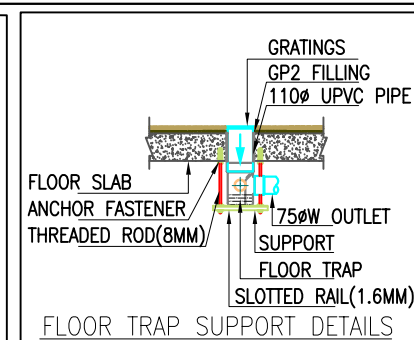
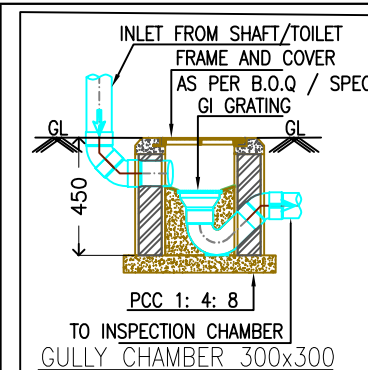
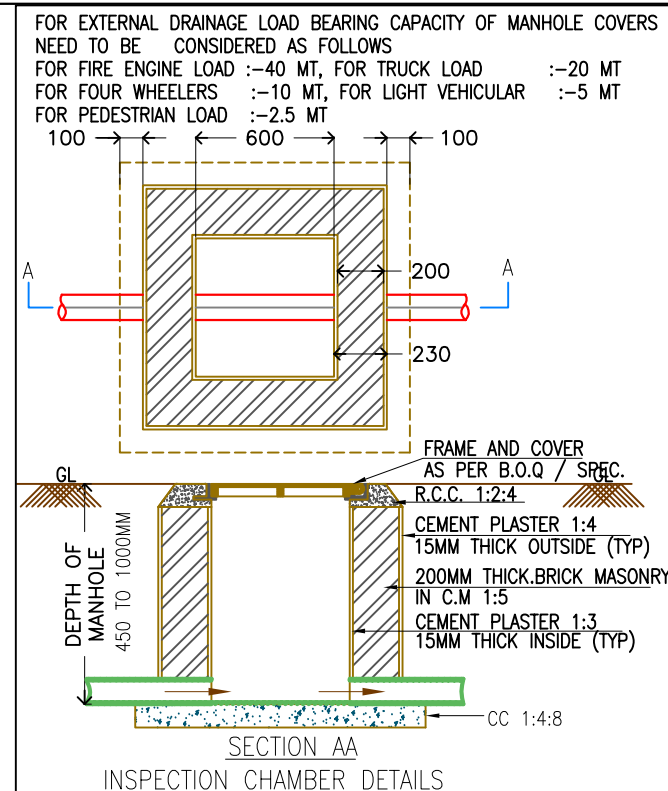
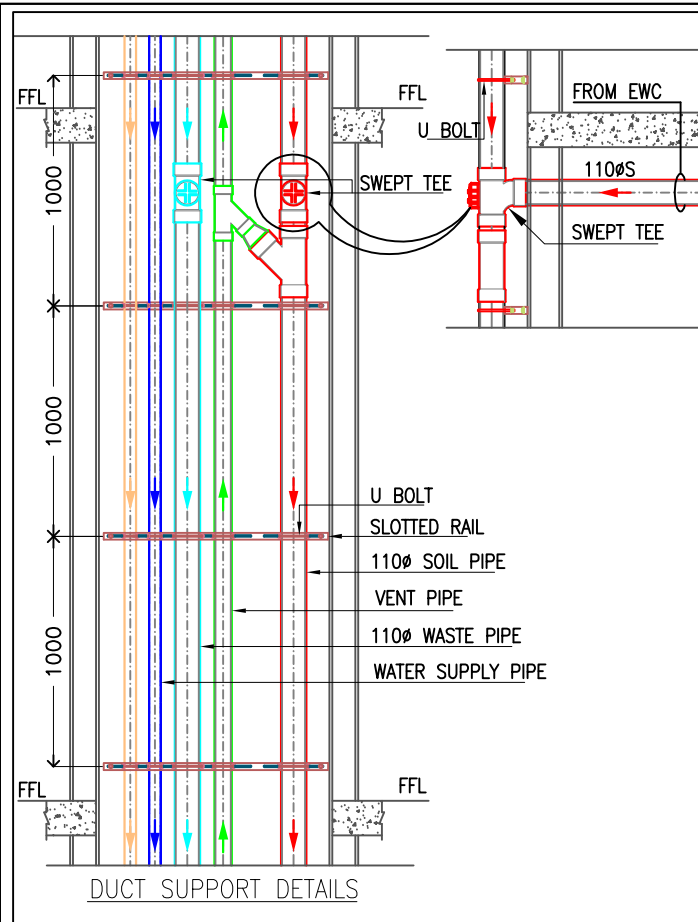
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KEY PLAN-SECOND FLOOR
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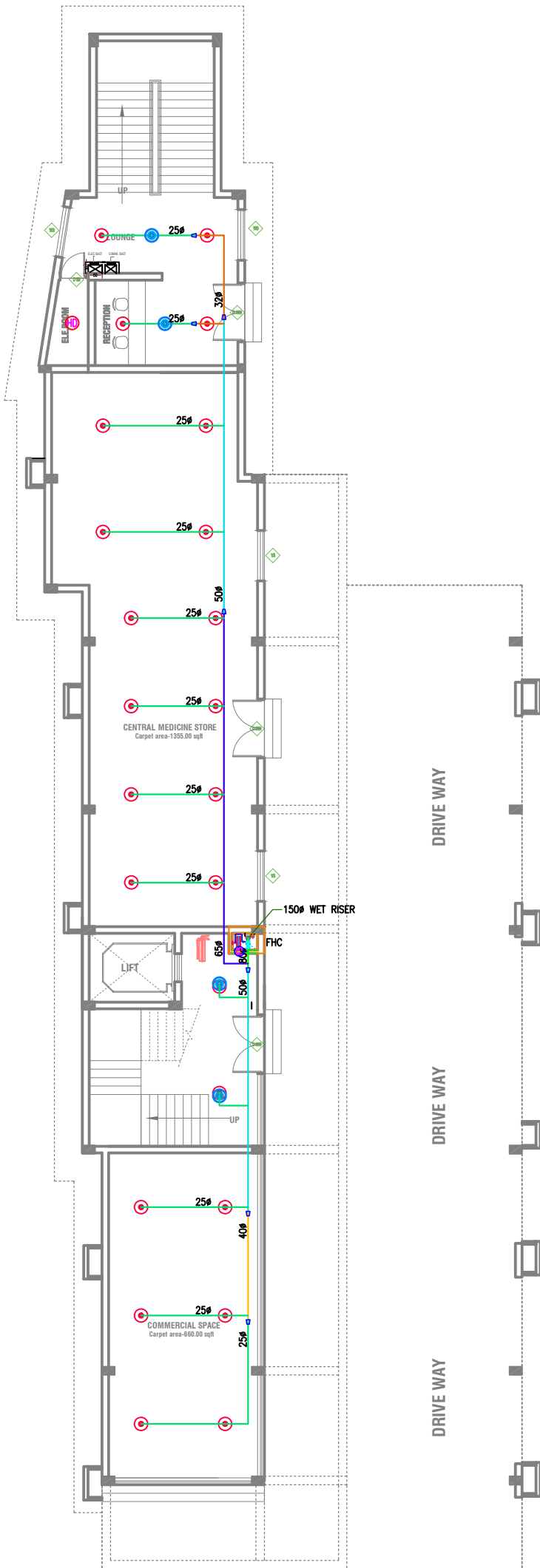
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REV	DESCRIPTIONS	DATE
PROJECT:		
NS HOSPITAL		
CLIENT:		
ARCHITECTS:		
ABHILASH ARCHITECTS		
CIVIL ARCHITECTURAL & INTERIOR CONSULTANT		
31/134G D, 1st Floor, 1st Floor, 1st Floor		
Building Services (MEP) Consultants		
BHAVANI		
31/134G D, 1st Floor, 1st Floor, 1st Floor		
TILET DETAILS -FIRST & SECOND FLOOR		
DATE	23.09.2021	ALL DIMENSIONS ARE IN MM
DRAWN	SS	UNLESS OTHERWISE SPECIFIED
CHECKED	PP	DRAWING NO : 1788-P-01.01
APPROVED	APPROVED	PROJECT NO : BH-HSH/1788
SCALE	1:250/250	REVISION : RD
SHEET-A1		

LEGEND :										NOTES :																																														
(S)	110ø SOIL PIPE		①	E.W.C (WALL MOUNTED)	①A	E.W.C(FLOOR MOUNTED)	PD	PLUMBING DUCT	T/B	TO BELOW	<p>1.WATER SUPPLY PIPES-ALL PIPE DIMENSIONS MENTIONED ARE INSIDE DIAMETER (ID)</p> <p>2.DRAINAGE PIPES- ALL PIPE DIMENSIONS MENTIONED ARE OUTSIDE DIAMETER(OD)</p> <p>3.POSITION & LEVELS OF SANITARY & CP FIXTURES MENTIONED ARE INDICATIVE ONLY AND ARE TO BE CO-ORDINATED WITH TILE MODULES</p> <p>4.THE GEYSER POSITIONS HAVE TO BE CO-ORDINATED WITH THE ELECTRICAL CONTRACTOR AT SITE</p> <p>5.THE WATER SUPPLY SCHEME HAS BEEN DESIGNED TO OBTAIN A MINIMUM PRESSURE OF 1.5 KG/CM² AT ALL THE FIXTURES. PLEASE CO-ORDINATE WITH THE CP & SANITARY MANUFACTURERS/CONTRACTORS BEFORE EXECUTING THE SAME</p> <p>6.DO NOT HEAT THE PIPE FOR JOINTING. USE 45°&'Y' FITTINGS</p> <p>7.EXTERNAL DRAINAGE PIPES MUST BE PCC ENCASED, IF THE DEPTH OF PIPE IS LESS THAN 1M FROM THE TOP OF THE PIPE</p> <p>8.FOR EXTERNAL DRAINAGE LOAD BEARING CAPACITY OF MANHOLE COVERS NEED TO BE CONSIDERED AS FOLLOWS</p> <p>FOR FIRE ENGINE LOAD :-40 MT, FOR TRUCK LOAD :-20 MT, FOR FOUR WHEELERS :-10 MT FOR LIGHT VEHICULAR :- 5 MT & FOR PEDESTRIAN LOAD :- 2.5 MT</p> <p>SPECIFICATION</p> <p>DRAINAGE PIPES-TOILET INSIDE & SHAFTS</p> <p>SOIL & WASTE PIPE-TYPE B 6KGF/CM² (IS 13592)</p> <p>RAIN WATER PIPE - TYPE A 4KGF/CM² (IS 13592)</p> <p>VENT PIPE - 4KGF/CM² (IS 4985)</p> <p>WATER SUPPLY PIPES-TOILET INSIDE (ROOMS)</p> <p>DOMESTIC & HOT WATER SUPPLY-CPVC SDR-11</p> <p>HOT WATER RETURN -CPVC SDR-11</p> <p>WATER SUPPLY PIPES-TOILET INSIDE (COMMON TOILETS)</p> <p>DOMESTIC WATER SUPPLY-ASTM SCH.40</p> <p>WATER SUPPLY PIPES-SHAFTS</p> <p>DOMESTIC WATER SUPPLY-ASTM SCH.40</p> <p>HOT WATER SUPPLY & RETURN-CPVC-SDR-11</p> <p>HOT WATER REVERSE RETURN-CPVC-SDR-11</p> <table><tr><td colspan="2">PROJECT:</td><td colspan="2">NS HOSPITAL</td><td colspan="2">Building Services (MEP) Consultants</td></tr><tr><td colspan="2">CLIENT:</td><td colspan="2"></td><td colspan="2"> 31/1342 D, Lal Salam Road, Ponnuruni Vythila PO, Cochin- 682 019 Kerala. Ph : +91484 - 4060404 , 4010111 Email : design@bhavaniconsultants.com</td></tr><tr><td colspan="2">ARCHITECTS:</td><td colspan="2">ABHILASH ARCHITECTS ART PRECISION + ETHICS CIVIL ARCHITECTURAL & INTERIOR CONSULTANT THOPPIKADAVU KOLLAM PHONE: 0474-2792144 www.abhilasharchitects.com</td><td colspan="2">TITLE : LEGEND, SPECIFICATIONS & NOTES</td></tr><tr><td colspan="2">DATE :</td><td colspan="2">23.09.2021</td><td colspan="2">ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.</td></tr><tr><td colspan="2">DRAWN :</td><td colspan="2">SS</td><td colspan="2">DRAWING NO : 1789-P-05.01</td></tr><tr><td colspan="2">CHECKED :</td><td colspan="2">SS</td><td colspan="2">PROJECT NO : BH-NSH/1789</td></tr><tr><td colspan="2">APPROVED :</td><td colspan="2">APPROVED</td><td colspan="2">SCALE : NTS</td></tr></table>				PROJECT:		NS HOSPITAL		Building Services (MEP) Consultants		CLIENT:				 31/1342 D, Lal Salam Road, Ponnuruni Vythila PO, Cochin- 682 019 Kerala. Ph : +91484 - 4060404 , 4010111 Email : design@bhavaniconsultants.com		ARCHITECTS:		ABHILASH ARCHITECTS ART PRECISION + ETHICS CIVIL ARCHITECTURAL & INTERIOR CONSULTANT THOPPIKADAVU KOLLAM PHONE: 0474-2792144 www.abhilasharchitects.com		TITLE : LEGEND, SPECIFICATIONS & NOTES		DATE :		23.09.2021		ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.		DRAWN :		SS		DRAWING NO : 1789-P-05.01		CHECKED :		SS		PROJECT NO : BH-NSH/1789		APPROVED :		APPROVED		SCALE : NTS	
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CHECKED :		SS		PROJECT NO : BH-NSH/1789																																																				
APPROVED :		APPROVED		SCALE : NTS																																																				
(S')	160ø SOIL PIPE		②	WASH BASIN	③	SHOWER @ 2050AFL	CO	CLEAN OUT	ACF	ACTIVATED CARBON FILTER																																														
(W)	75ø WASTE PIPE		④	ANGLE VALVE	⑤	MULTIPLE FLOOR TRAP DEEP SEAL	CL	COVER LEVEL	BOP	BOTTOM OF PIPE																																														
(W*)	110ø WASTE PIPE		⑤A	MULTIPLE FLOOR TRAP	⑥	ABLUTION FAUCET @650 AFL	PL	PUMPING LINE	HNS	HYDRO PNEUMATIC SYSTEM																																														
(W')	160ø WASTE PIPE		⑦	FLUSHING CISTERN(CONCEALED)	⑦A	FLUSH VALVE	PV	PRESSURE VESSEL	NRV	NON RETURN VALVE																																														
(RW)	110ø RAIN WATER PIPE		⑧	STAINLESS STEEL SINK	⑨	SINGLE LEVER DIVERTER	MH	MANHOLE	PRV	PRESSURE REDUCING VALVE																																														
(AS)	ANTI-SYPHONIC PIPE		⑨A	WALL MIXER	⑩	WASHING MACHINE	GL	GROUND LEVEL	PSF	PRESSURE SAND FILTER																																														
(CD)	50ø CONDENSATE DRAIN		⑪	ISOLATION VALVE	⑫	GEYSER (IN CEILING)	RE	RODDING EYE	SIC	SOIL INSPECTION CHAMBER																																														
(SWD)	STORM WATER DRAIN		⑬	SPOUT@700AFL	⑭	CONCEALED STOP COCK@2050AFL	IL	INVERT LEVEL	WIC	WASTE INSPECTION CHAMBER																																														
(SD)	32ø SUNKEN DRAIN		⑮	SS GRATINGS	⑮	BIB COCK	IV	ISOLATION VALVE	AARV	AUTOMATIC AIR RELEASE VALVE																																														
(DW)	DOMESTIC WATER SUPPLY		⑰	URINAL	⑱	URINAL SENSOR	BV	BUTTERFLY VALVE	AFFL	ABOVE FINISHED FLOOR LEVEL																																														
(FW)	FLUSH BOOSTED WATER SUPPLY		⑲	DISH WASHER	⑳	P-TRAP WITH CLEANOUT	NC	NORMALLY CLOSED	RWIC	RAIN WATER INSPECTION CHAMBER																																														
(FW')	FLUSH WATER SUPPLY		㉑	WATER PURIFIER	㉒	MULTIPLE FLOOR TRAP WITH CLEANOUT	GC	GULLY CHAMBER	SWD	STORM WATER DRAIN																																														
(HW)	HOT WATER SUPPLY		WATER SUPPLY SUPPORT SCHEDULE HORIZONTAL				CL	CENTER LINE	F/AT	FROM ABOVE TOILET																																														
(HR)	HOT WATER RETURN		NOMINAL PIPE DIA		ROD SIZE		D/A	DUCT ABOVE	F/EX	FROM EXTERNAL																																														
(HRR)	HOT WATER RETURN		INCH		MM		D/B	DUCT BELOW	F/HL	FROM HIGH LEVEL																																														
			½"-1"		15ø-25ø		F/A	FROM ABOVE	T/EX	TO EXTERNAL																																														
			1¼"		32ø		T/A	TOILET ABOVE	T/HL	TO HIGH LEVEL																																														
			2"		50ø		<p>ISOLATION VALVE</p> <p> ISOLATION VALVE</p> <p> NON RETURN VALVE</p> <p> BUTTERFLY VALVE</p> <p> AIR RELEASE VALVE</p> <p> PRV</p> <p> ANGLE VALVE</p> <p> Y STRAINER</p> <p> REDUCER</p> <p> WALL MIXER</p> <p> SINGLE LEVER DIVERTER</p> <p> CONCEALED STOP COCK</p> <p> GEYSER</p>																																																	
			2½"		65ø										1200		1200																																							
			3"		80ø										1200		1200																																							
			4"		100ø						1500		1500																																											
			6"		150ø						1500		1500																																											
			8"		200ø						2000		2000																																											
DRAINAGE PIPE SUPPORT SCHEDULE			6"		150ø						1500		1500																																											
PIPE SUPPORT DISTANCE IN MM			8"		200ø						2000		2000																																											
PIPE SIZE (mm)			HORIZONTAL		VERTICAL						HANGER ROD SIZE		WATER SUPPLY SUPPORT SCHEDULE VERTICAL																																											
32ø/40ø			600		1500		8		NOMINAL PIPE DIA																																															
50ø			600		1500		8		INCH																																															
75ø			1000		1500		8		MM																																															
90ø			1000		1500		8		½"-3/4"																																															
110ø			1500		1500		10		15ø-20ø																																															
160ø			1600		2000		10		8																																															
									1" -1¼"																																															
									25ø-32ø																																															
									8																																															
									1200																																															
									1000																																															
									1500																																															
									1500																																															
									2000																																															
									2000																																															



PROJECT:	NS HOSPITAL	Building Services (MEP) Consultants
CLIENT:		 31/1342 D, Lal Salam Road, Ponnuruthi Vyttila PO, Cochin- 682 019, Kerala. Ph : +91484 - 4060404 , 4010111 Email : design@bhavaniconsultants.com
ARCHITECTS:	ABHILASH ARCHITECTS ART PRECISION + ETHICS CIVIL ARCHITECTURAL & INTERIOR CONSULTANT THOPPIKADAVU KOLLAM PHONE : 0474-2792144 www.abhilasharchitects.com	TITLE : MASTER DETAILS DATE : 23.09.2021 DRAWN : SS CHECKED : SP APPROVED : APPROVED SCALE : NTS
		ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED. DRAWING NO : 1789-P-05.02 PROJECT NO : BH-NSH/1789

MEP DRAWINGS – FIRE



LEGENDS	
FHC	FIRE HOSE CABINET
	HOSE REEL DRUM
	HYDRANT VALVE
	SPRINKLER BULB (Upright)
	SPRINKLER BULB (Pendant)
	SPRINKLER BULB (Sidewall)
	REDUCER
	BUTTERFLY VALVE
	NON RETURN VALVE
	FIRE EXTINGUISHER (DCP)

ISSUED FOR:

TENDER PURPOSE

REV	DESCRIPTIONS	DATE

PROJECT:

N.S HOSPITAL , KOLLAM

CLIENT:

ARCHITECTS:

ABHILASH ARCHITECTS
 Near Art Of Living Admaram
 Thoppikkadavu, Kollam
 Kerala, India
 Pin- 691012
 Tele No: + 914742792144
 + 914742792134


 ABHILASH ARCHITECTS
 ART PRECIOUS DESIGN

Building Services (MEP) Consultants


 31/1342 D, Lal Salam Road, Pannurummi
 Vyttila P.O, Cochin- 682 019 Kerala.
 Ph: +91484 - 4040404 , 4010111
 Email : design@bhavaniconsultants.com

TITLE :

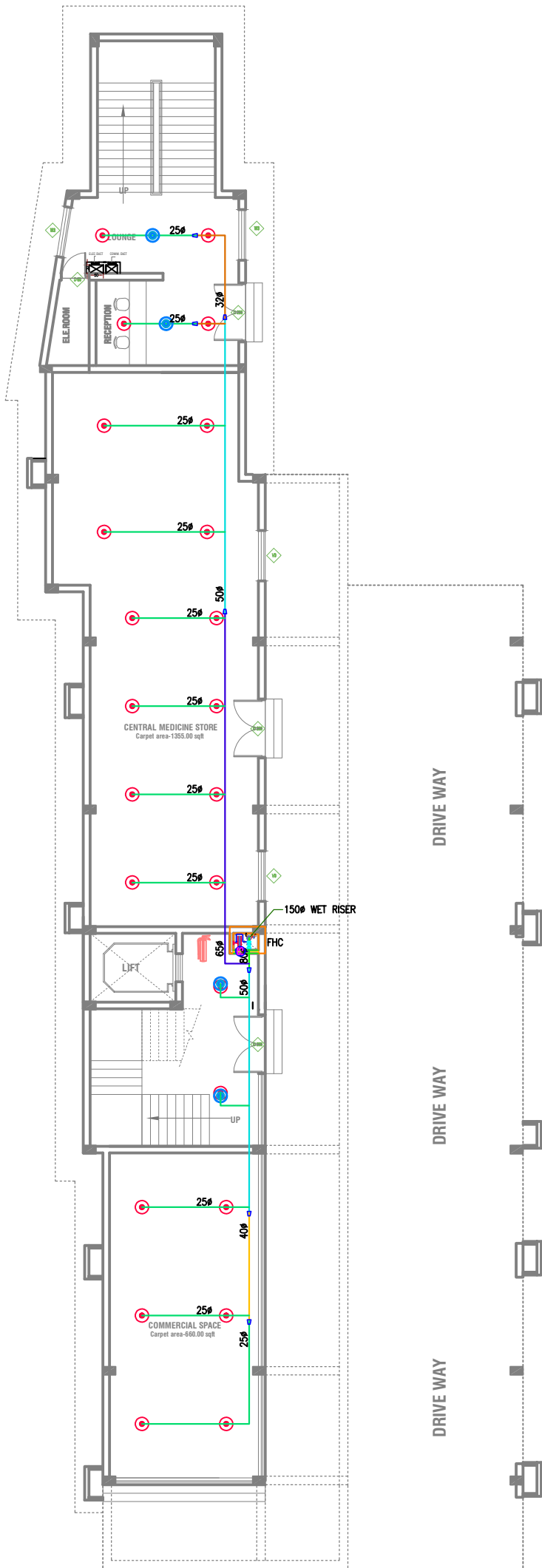
**GROUND FLOOR
 FIRE PROTECTION SYSTEM**

DATE : 23.09.2021	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.
DRAWN : JINU	
CHECKED : SS	DRAWING NO : 1789-F-2.01
APPROVED : AD	PROJECT NO : BH-NSH/1789
SCALE : 1:75	REVISION : R0
	SHEET-A1

GROUND FLOOR

Plinth Area:- 327.10 sqm

TOTAL Area:- 2929.45sqm



LEGENDS	
FHC	FIRE HOSE CABINET
	HOSE REEL DRUM
	HYDRANT VALVE
	SPRINKLER BULB (Upright)
	SPRINKLER BULB (Pendant)
	SPRINKLER BULB (Sidewall)
	REDUCER
	BUTTERFLY VALVE
	NON RETURN VALVE
	FIRE EXTINGUISHER (DCP)

ISSUED FOR:

TENDER PURPOSE

REV	DESCRIPTIONS	DATE

PROJECT:

N.S HOSPITAL , KOLLAM

CLIENT:

ARCHITECTS:

ABHILASH ARCHITECTS
 Near Art Of Living Ashramam
 Thoppikkadavu, Kollam
 Kerala, India
 Pin- 691012
 Tele No: + 914742792144
 + 914742792134



Building Services (MEP) Consultants

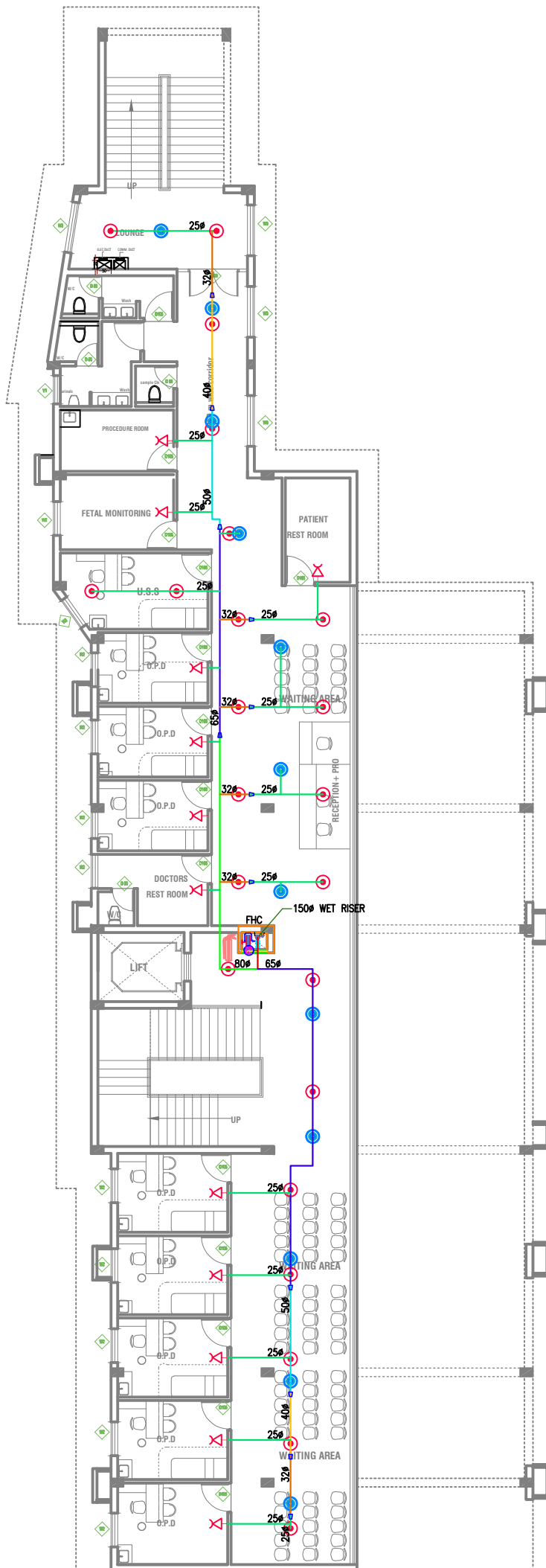
 31/1342 D, Lal Salam Road, Panmuranthi
 Vyttila, P.O. Cochin- 682 019 Kerala.
 Ph: +91484 - 4040404, 4010111
 Email: design@bhavaniconsultants.com

TITLE :

**GROUND FLOOR
 FIRE PROTECTION SYSTEM**

DATE : 23.09.2021	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.	
DRAWN : JINU	CHECKED : SS	DRAWING NO : 1789-F-2.01
APPROVED : AD	PROJECT NO : BH-NSH/1789	SCALE : 1:75
REVISION : R0	SHEET-A1	

GROUND FLOOR
 Plinth Area:- 327.10 sqm
 TOTAL Area:- 2929.45sqm



LEGENDS	
FHC	FIRE HOSE CABINET
	HOSE REEL DRUM
	HYDRANT VALVE
	SPRINKLER BULB (Upright)
	SPRINKLER BULB (Pendant)
	SPRINKLER BULB (Sidewall)
	REDUCER
	BUTTERFLY VALVE
	NON RETURN VALVE
	FIRE EXTINGUISHER (DCP)

ISSUED FOR:		
TENDER PURPOSE		
REV	DESCRIPTIONS	DATE

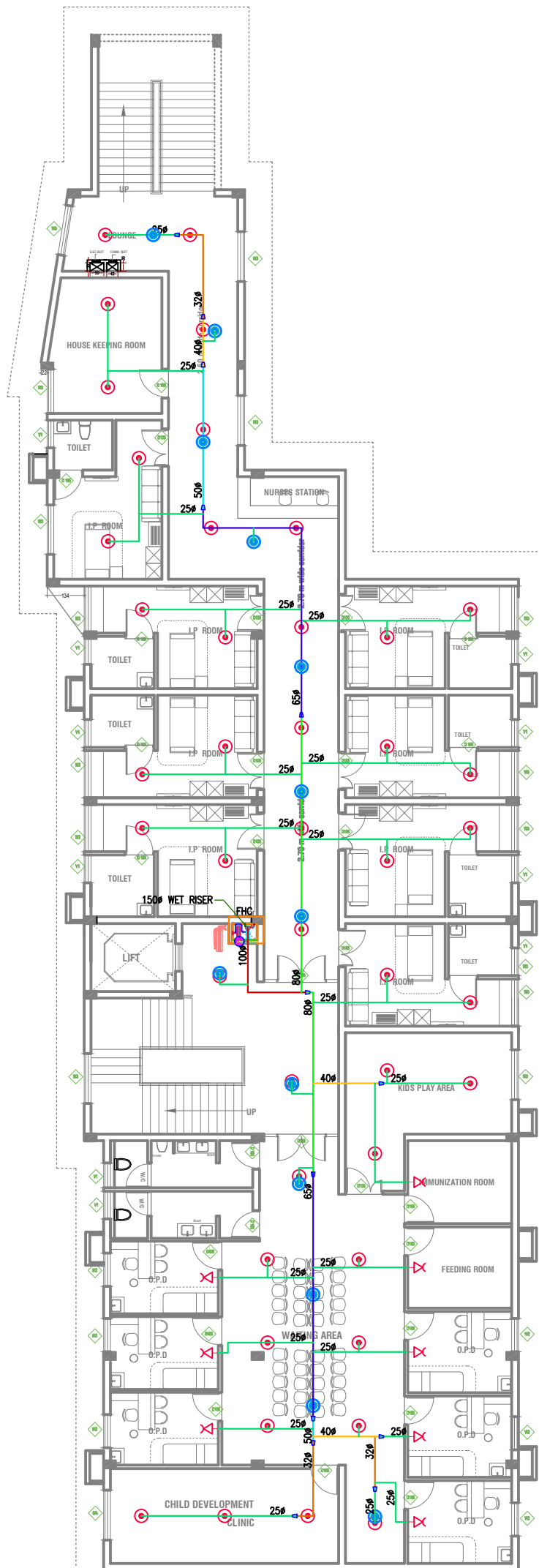
PROJECT:
N.S HOSPITAL , KOLLAM

CLIENT:

ARCHITECTS:
ABHILASH ARCHITECTS
Near Art Of Living Ashramam
Thoppikkadavu, Kollam
Kerala, India
Pin- 691012
Tele No. : + 914742792144
+ 914742792134

Building Services (MEP) Consultants
BHAVANI CONSULTANTS
31/1342 D, Lal Salam Road, Pannurumthi
Vythila PO, Cochin- 682 019 Kerala,
Ph : +91484 - 4040404 , 4010111
Email : design@bhavaniconsultants.com

TITLE :	
FIRST FLOOR FIRE PROTECTION SYSTEM	
DATE : 23.09.2021	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.
DRAWN : JINU	
CHECKED : SS	DRAWING NO : 1789-F-2.02
APPROVED : AD	PROJECT NO : BH-NSH/1789
SCALE : 1:75	REVISION : R0
	SHEET-A1



LEGENDS	
FHC	FIRE HOSE CABINET
	HYDRANT VALVE
	SPRINKLER BULB (Upright)
	SPRINKLER BULB (Pendant)
	SPRINKLER BULB (Sidewall)
	REDUCER
	BUTTERFLY VALVE
	NON RETURN VALVE
	FIRE EXTINGUISHER (DCP)

ISSUED FOR:		
TENDER PURPOSE		
REV	DESCRIPTIONS	DATE

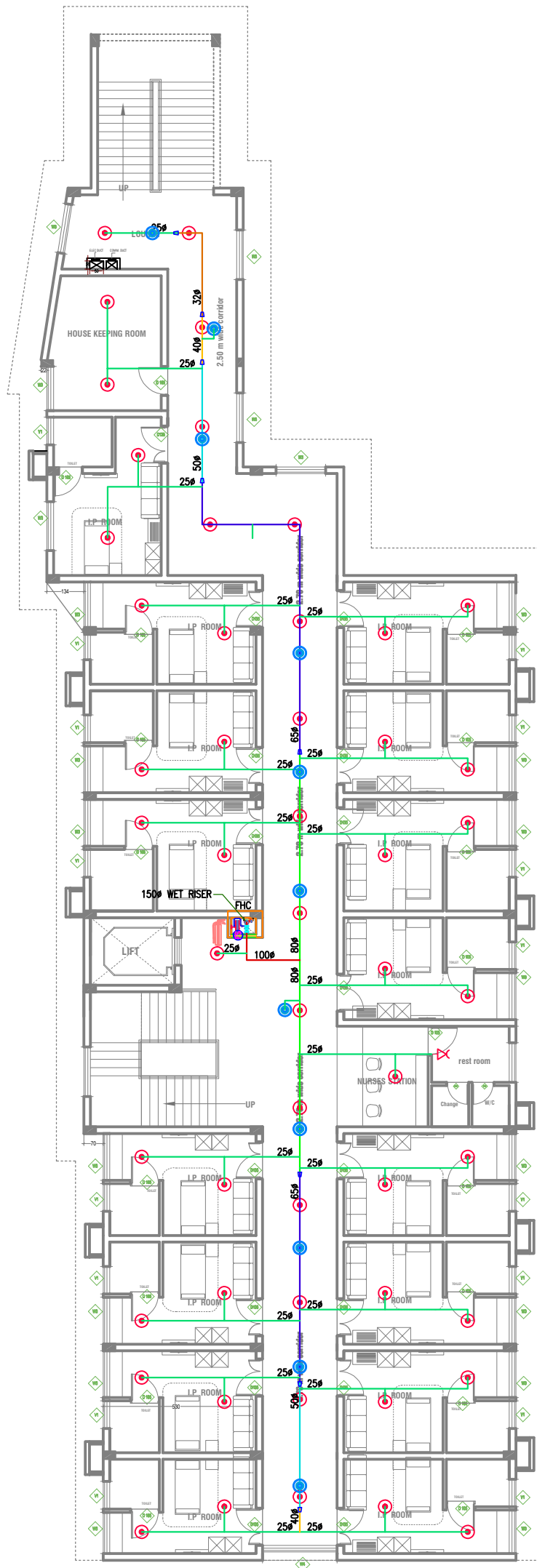
PROJECT:
N.S HOSPITAL , KOLLAM

CLIENT:

ARCHITECTS:
ABHILASH ARCHITECTS
Near Art Of Living Adnanam
Thoppikkadavu, Kollam
Kerala, India
Pin- 691012
Tele No. : + 914742792144
+ 914742792134

Building Services (MEP) Consultants
BHAVANI CONSULTANTS
31/1342 D, Lal Salam Road, Pannurunnal
Vythila P.O, Cochin- 682 019 Kerala,
Ph : +91484 - 4040404 , 4010111
Email : design@bhavaniconsultants.com

TITLE :	
SECOND FLOOR FIRE PROTECTION SYSTEM	
DATE : 23.09.2021	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.
DRAWN : JINU	
CHECKED : SS	DRAWING NO : 1789-F-2.03
APPROVED : AD	PROJECT NO : BH-NSH/1789
SCALE : 1:75	REVISION : R0



LEGENDS	
FHC	FIRE HOSE CABINET
	HOSE REEL DRUM
	HYDRANT VALVE
	SPRINKLER BULB (Upright)
	SPRINKLER BULB (Pendant)
	SPRINKLER BULB (Sidewall)
	REDUCER
	BUTTERFLY VALVE
	NON RETURN VALVE
	FIRE EXTINGUISHER (DCP)

ISSUED FOR:		
TENDER PURPOSE		
REV	DESCRIPTIONS	DATE

PROJECT:
N.S HOSPITAL , KOLLAM

CLIENT:

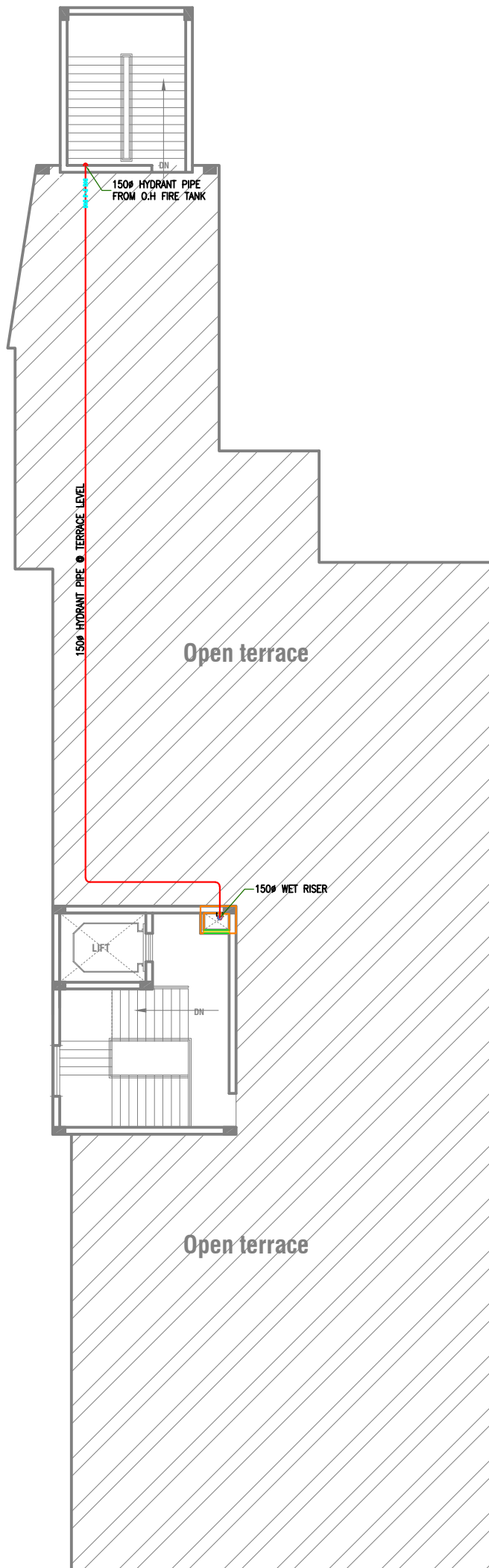
ARCHITECTS:
ABHILASH ARCHITECTS Near Art Of Living Adnanam Thoppil Kadavur, Kollam Kerala, India Pin- 691012 Tele No. : + 914742792144 + 914742792134

Building Services (MEP) Consultants
BHAVANI CONSULTANTS
31/1342 D, Lal Salam Road, Pannurunnal Vythila P.O, Cochin- 682 019 Kerala, Ph : +91484 - 4040404 , 4010111 Email : design@bhavaniconsultants.com

TITLE :
THIRD & FOURTH FLOOR FIRE PROTECTION SYSTEM

DATE : 23.09.2021	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.
DRAWN : JINU	
CHECKED : SS	DRAWING NO : 1789-F-2.04
APPROVED : AD	PROJECT NO : BH-NSH/1789
SCALE : 1:75	REVISION : R0

THIR
Plin



LEGENDS	
FHC	FIRE HOSE CABINET
	HOSE REEL DRUM
	HYDRANT VALVE
	SPRINKLER BULB (Upright)
	SPRINKLER BULB (Pendant)
	SPRINKLER BULB (Sidewall)
	REDUCER
	BUTTERFLY VALVE
	NON RETURN VALVE
	FIRE EXTINGUISHER (DCP)

ISSUED FOR:		
TENDER PURPOSE		

REV	DESCRIPTIONS	DATE

PROJECT:	
N.S HOSPITAL , KOLLAM	

CLIENT:

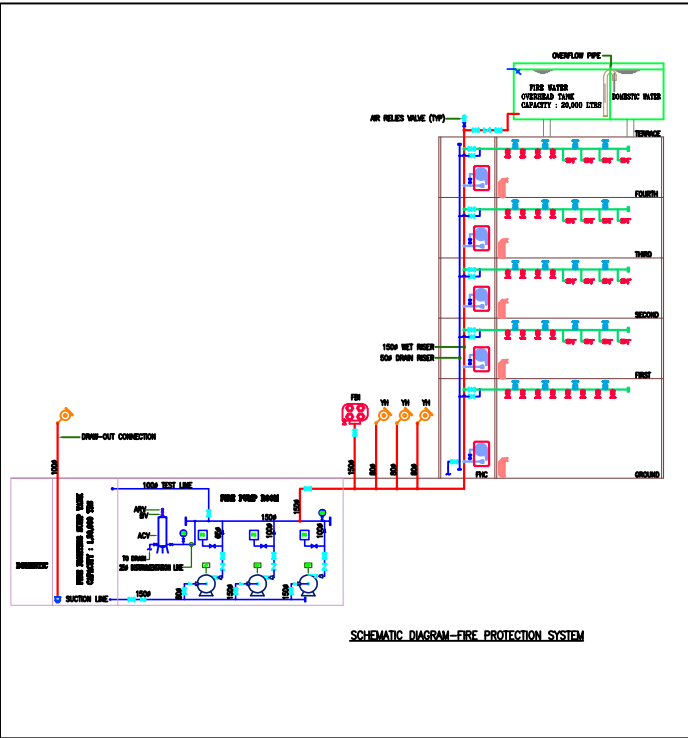
ARCHITECTS:	
ABHILASH ARCHITECTS Near Art Of Living Adnanam Thoppil Kadavil, Kollam Kerala, India Pin- 691012 Tele No. : + 914742792144 + 914742792134	 ABHILASH ARCHITECTS <small>ART PRECIOUS DESIGN</small>

Building Services (MEP) Consultants	
 BHAVANI <small>CONSULTANTS</small>	31/1342 D, Lal Salam Road, Pannurunnal Vythila P.O, Cochin- 682 019 Kerala, Ph : +91484 - 4040404 , 4010111 Email : design@bhavaniconsultants.com

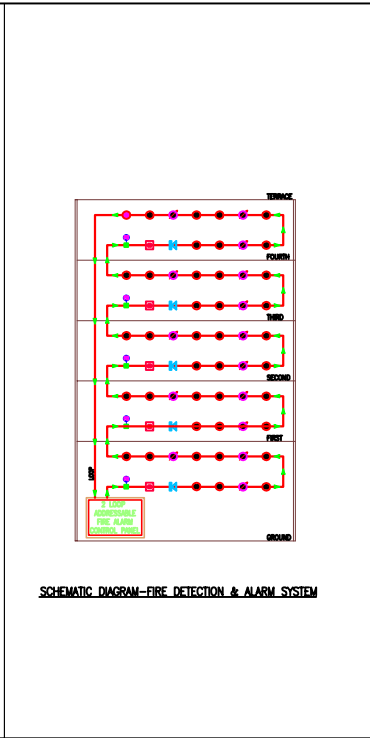
TITLE :	
TERRACE FLOOR FIRE PROTECTION SYSTEM	

DATE : 23.09.2021	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.	
DRAWN : JINU	CHECKED : SS	DRAWING NO : 1789-F-2.05
APPROVED : AD	PROJECT NO : BH-NSH/1789	REVISION : R0
SCALE : 1:75	SHEET-A1	

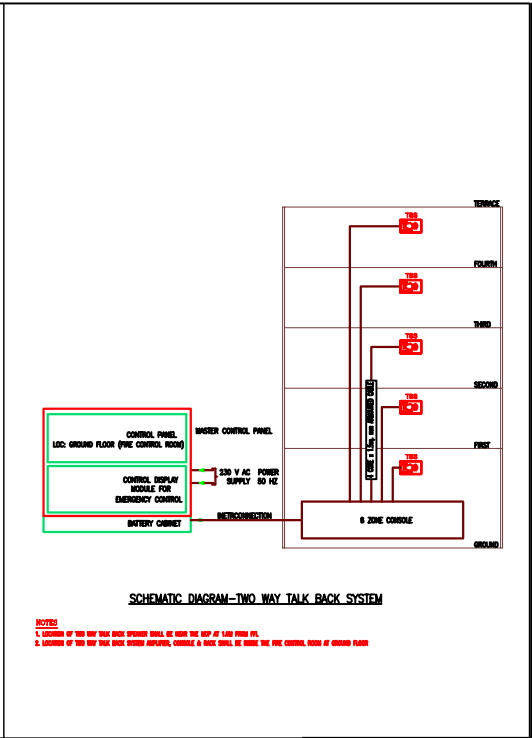
TERRACE FLOOR



SCHEMATIC DIAGRAM-FIRE PROTECTION SYSTEM



SCHEMATIC DIAGRAM-FIRE DETECTION & ALARM SYSTEM

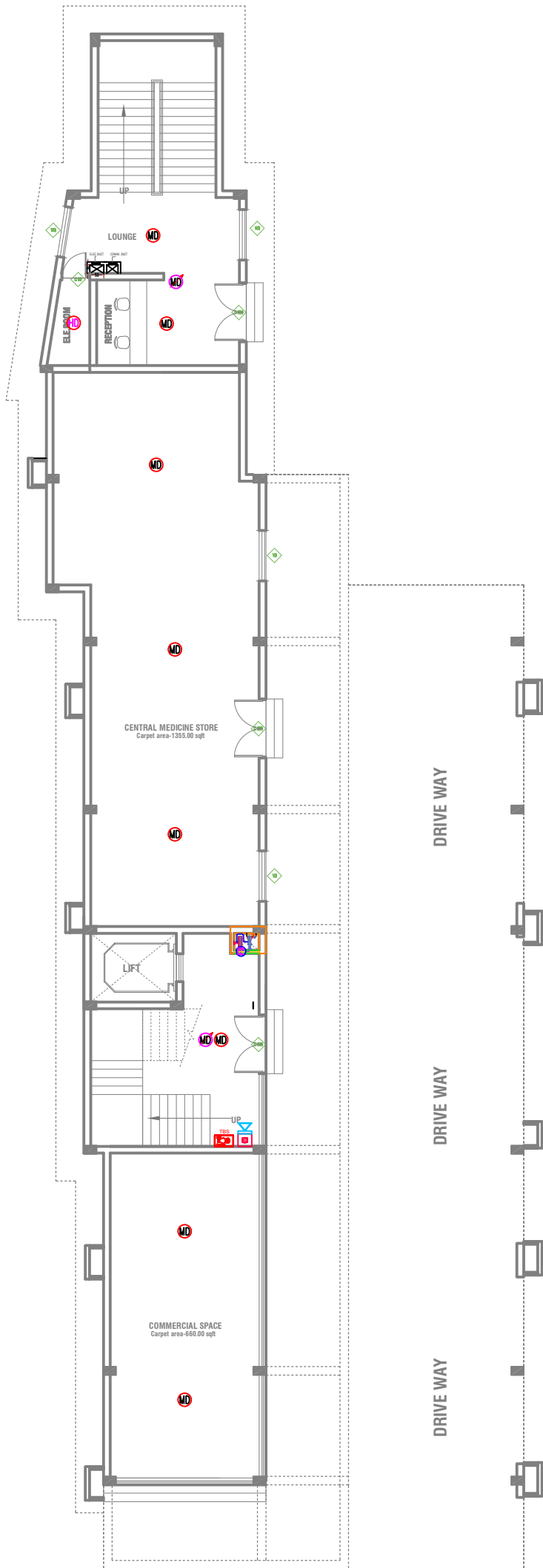


SCHEMATIC DIAGRAM-TWO WAY TALK BACK SYSTEM

NOTES
1. LOCATION OF TWO WAY TALK BACK SYSTEM SHALL BE WITH THE HELP OF L&B FROM P&I.
2. LOCATION OF TWO WAY TALK BACK SYSTEM APPLIANCE, CHARGE & DATE SHALL BE MARKED THE FIRE CONTROL ROOM AT GROUND FLOOR.

LEGENDS	
FHC	FIRE HOSE CABINET
HSD	HOSE REEL DRUM
HV	HYDRANT VALVE
SB (U)	SPRINKLER BULB (Upright)
SB (P)	SPRINKLER BULB (Pendant)
SB (S)	SPRINKLER BULB (Sidecut)
R	REDUCER
BV	BUTTERFLY VALVE
NRV	NON RETURN VALVE
FE	FIRE EXTINGUISHER (DOP)
FACP	FIRE ALARM CONTROL PANEL
MCP	MANUAL CALL POINT
EH	ELECTRONIC HOOTER
MSD	MULTI SENSOR DETECTOR BELOW CEILING
MSA	MULTI SENSOR DETECTOR ABOVE CEILING
HT	HEAT DETECTOR
FS	FLOW SWITCH
JB	JUNCTION BOX
MM	MONITOR MODULE
TWBT	TWO WAY TALK BACK SPEAKER

ISSUED FOR: TENDER PURPOSE		PROJECT: N.S HOSPITAL , KOLLAM
		CLIENT:
		ARCHITECTS: ASHLASH ARCHITECTS Near Art Of Living Ashram Pappaladon, Kollam Pin-691002 Mob No : +91 4767357044 +91 4767357154
		TITLE : SCHEMATIC DIAGRAM
REV	DESCRIPTIONS	DATE
Building Services (MEP) Consultants		
BHAVANI CONSULTANTS		
3/11342 D, 1st Subam Road, Perumthoor Vayalar, P.O, Cochin-682 019 Kerala, Pin - 684 004 - 402004 - 402011 Email: bhavani@bhavaniconsultants.com		
DATE : 23.09.2021	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.	
DRAWN : JNU	CHECKED : SS	PROJECT NO : BH-NSH/1789
APPROVED: AD	SCALE : NTS	REVISION : NO
		SHEET-A1



LEGENDS	
FACP	FIRE ALARM CONTROL PANEL
MCP	MANUAL CALL POINT
EH	ELECTRONIC HOOTER
MSD	MULTI SENSOR DETECTOR BELOW CEILING
MSD	MULTI SENSOR DETECTOR ABOVE CEILING
HD	HEAT DETECTOR
FS	FLOW SWITCH
JB	JUNCTION BOX
MM	MONITOR MODULE
TWS	TWO WAY TALK BACK SPEAKER

ISSUED FOR:
TENDER PURPOSE

REV	DESCRIPTIONS	DATE

PROJECT:
N.S HOSPITAL , KOLLAM

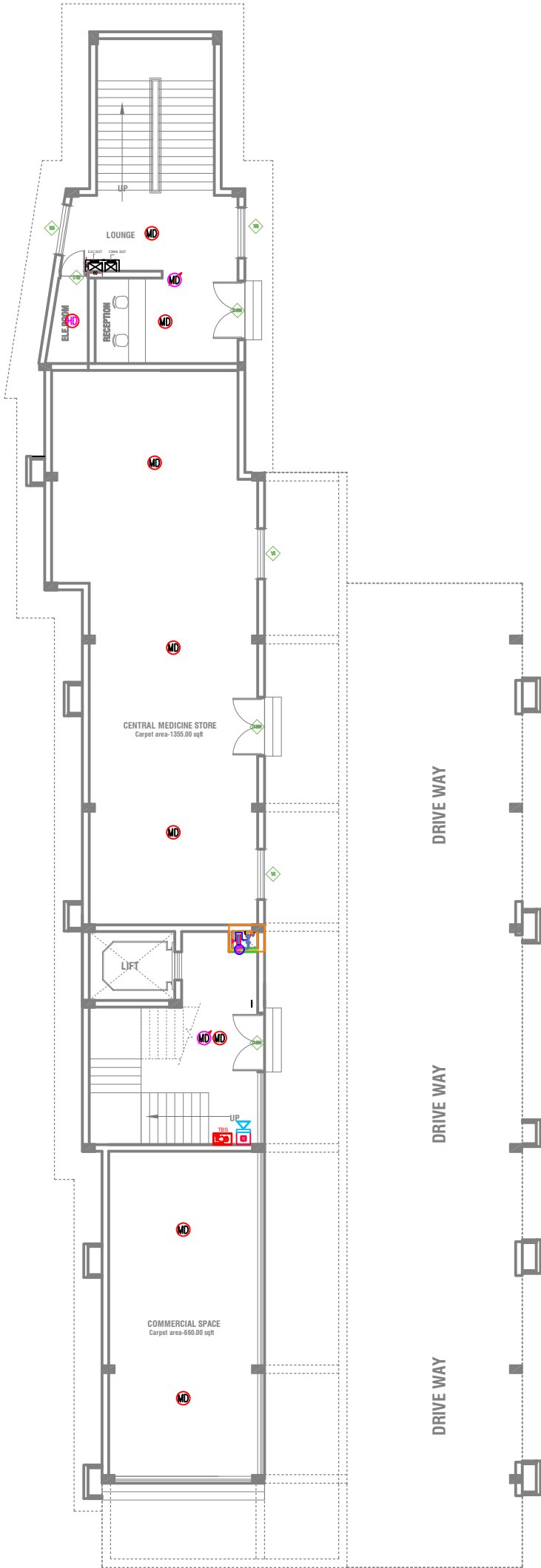
CLIENT:

ARCHITECTS:
ABHILASH ARCHITECTS
Near Art Of Living Adnanam
Thoppil Kadavur, Kollam
Kerala, India
Pin- 691012
Tele No. : + 914742792144
+ 914742792134

Building Services (MEP) Consultants
BHAVANI CONSULTANTS
31/1342 D, Lal Salam Road, Pannurunnal
Vythila P.O, Cochin- 682 019 Kerala,
Ph : +91484 - 4040404 , 4010111
Email : design@bhavaniconsultants.com

TITLE :	
GROUND FLOOR-TALKBACK SYSTEM, FIRE DETECTION & ALARM SYSTEM	
DATE : 23.09.2021	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.
DRAWN : JINU	DRAWING NO : 1789-F-6.01
CHECKED : SS	PROJECT NO : BH-NSH/1789
APPROVED : AD	REVISION : R0
SCALE : 1:75	SHEET-A1

GROUND FLOOR
Plinth Area:- 327.10 sqm
TOTAL Area:- 2929.45sqm



LEGENDS	
FACP	FIRE ALARM CONTROL PANEL
	MANUAL CALL POINT
	ELECTRONIC HOOTER
	MULTI SENSOR DETECTOR BELOW CEILING
	MULTI SENSOR DETECTOR ABOVE CEILING
	HEAT DETECTOR
	FLOW SWITCH
	JUNCTION BOX
	MONITOR MODULE
	TWO WAY TALK BACK SPEAKER

ISSUED FOR:

TENDER PURPOSE

REV	DESCRIPTIONS	DATE

PROJECT:

N.S HOSPITAL , KOLLAM

CLIENT:

ARCHITECTS:

ABHILASH ARCHITECTS
Near Art Of Living Admaram
Thoppilkadavu, Kollam
Kerala, India
Pin- 691012
Tele No: + 914742792144
+ 914742792134

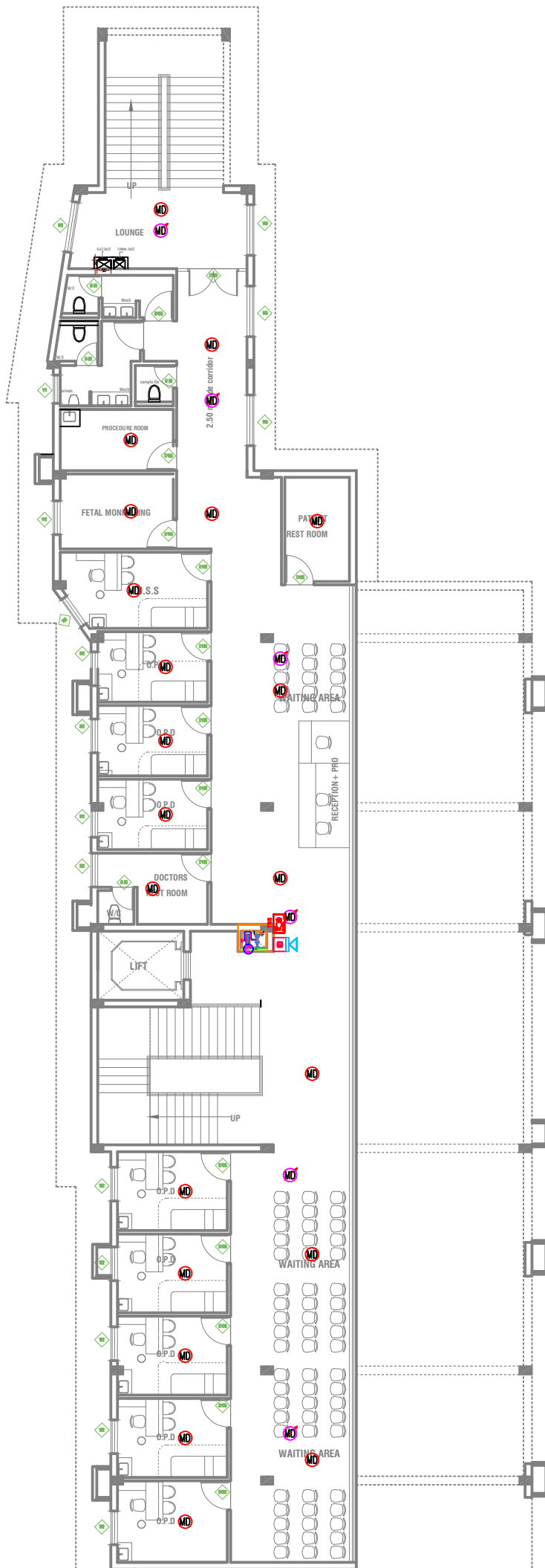

ABHILASH ARCHITECTS
ART PRECIOUS - DESIGN

Building Services (MEP) Consultants


31/1342 D, Lal Salam Road, Pannurumthi
Vyttila P.O, Cochin- 682 019 Kerala.
Ph: +91484 - 4040404 , 4010111
Email : design@bhavaniconsultants.com

TITLE :	
GROUND FLOOR-TALKBACK SYSTEM, FIRE DETECTION & ALARM SYSTEM	
DATE : 23.09.2021	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.
DRAWN : JINU	DRAWING NO : 1789-F-6.02
CHECKED : SS	PROJECT NO : BH-NSH/1789
APPROVED : AD	REVISION : R0
SCALE : 1:75	SHEET-A1

GROUND FLOOR
Plinth Area:- 327.10 sqm
TOTAL Area:- 2929.45sqm




LEGENDS	
FACP	FIRE ALARM CONTROL PANEL
	MANUAL CALL POINT
	ELECTRONIC HOOTER
	MULTI SENSOR DETECTOR BELOW CEILING
	MULTI SENSOR DETECTOR ABOVE CEILING
	HEAT DETECTOR
	FLOW SWITCH
	JUNCTION BOX
	MONITOR MODULE
	TWO WAY TALK BACK SPEAKER

ISSUED FOR:
TENDER PURPOSE

REV	DESCRIPTIONS	DATE

PROJECT:
N.S HOSPITAL , KOLLAM

CLIENT:

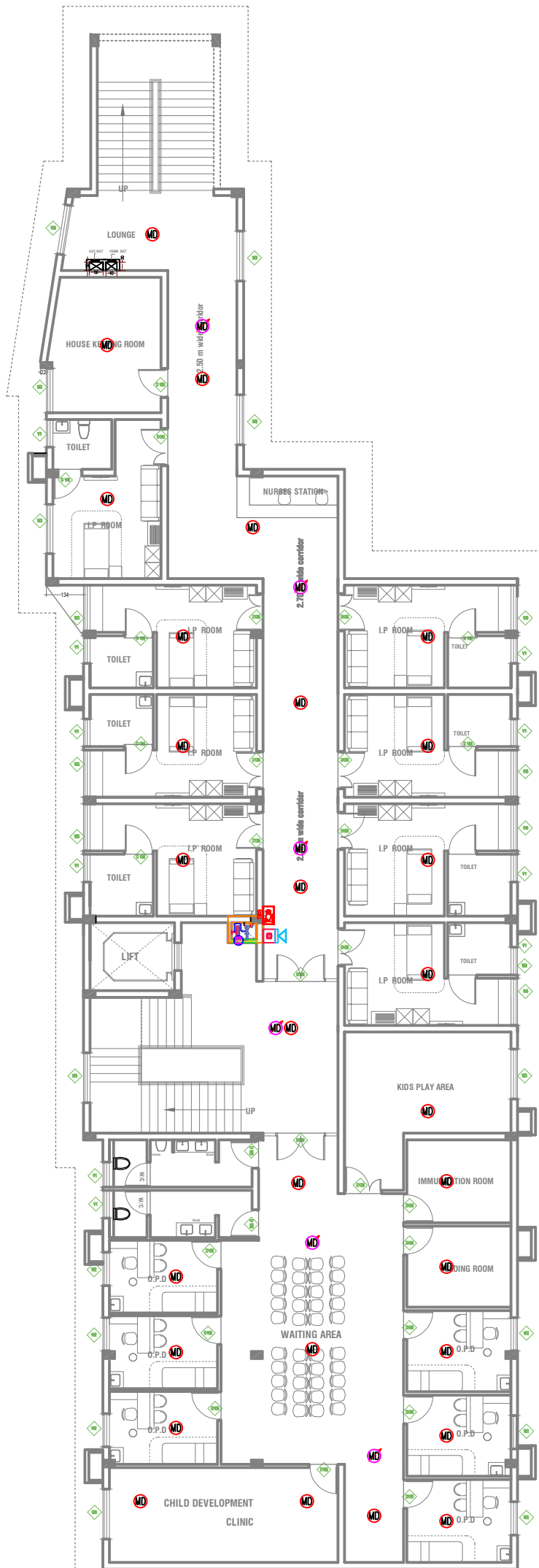
ARCHITECTS:
ABHILASH ARCHITECTS
Near Art Of Living Adnanam
Thoppil Kadavur, Kollam
Kerala, India
Pin- 691012
Tele No. : + 914742792144
+ 914742792134


Building Services (MEP) Consultants

31/1342 D, Lal Salam Road, Panunuruthi
Vythila P.O, Cochin- 682 019 Kerala,
Ph : +91484 - 4040404 , 4010111
Email : design@bhavaniconsultants.com

TITLE :
**FIRST FLOOR-TALKBACK SYSTEM,
FIRE DETECTION & ALARM SYSTEM**

DATE : 23.09.2021	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.
DRAWN : JINU	
CHECKED : SS	DRAWING NO : 1789-F-6.03
APPROVED : AD	PROJECT NO : BH-NSH/1789
SCALE : 1:75	REVISION : R0

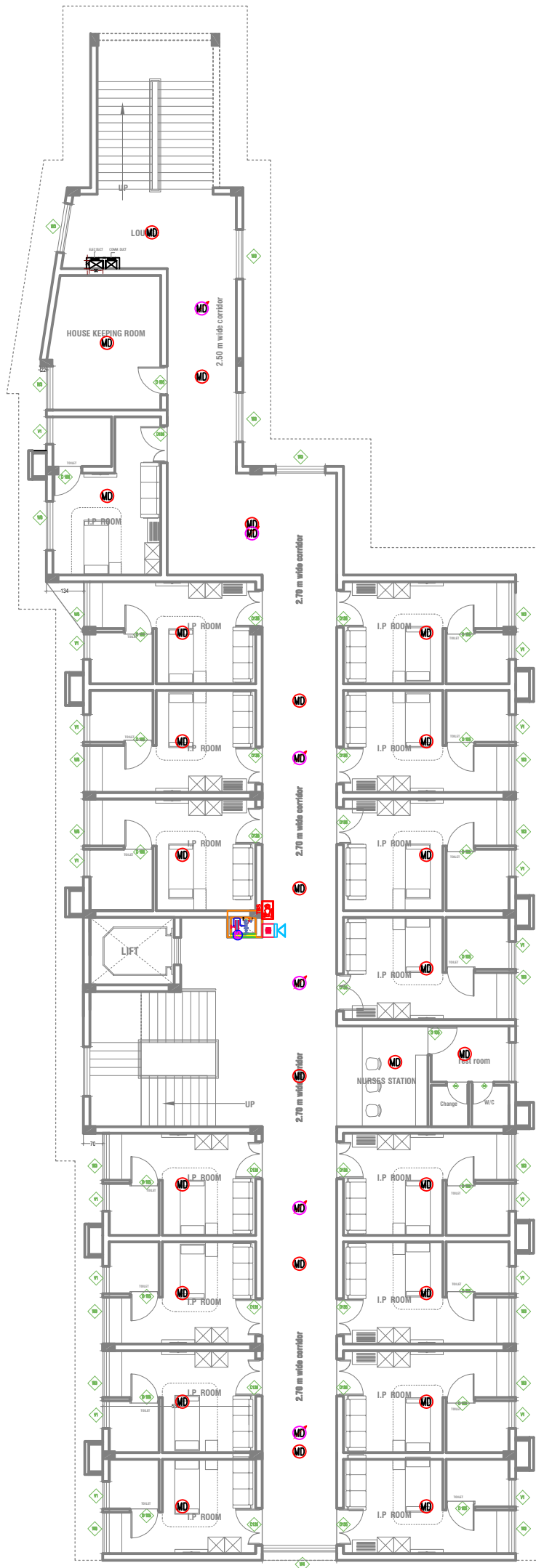


LEGENDS	
FACP	FIRE ALARM CONTROL PANEL
	MANUAL CALL POINT
	ELECTRONIC HOOTER
	MULTI SENSOR DETECTOR BELOW CEILING
	MULTI SENSOR DETECTOR ABOVE CEILING
	HEAT DETECTOR
	FLOW SWITCH
	JUNCTION BOX
	MONITOR MODULE
	TWO WAY TALK BACK SPEAKER

ISSUED FOR:		
TENDER PURPOSE		
REV	DESCRIPTIONS	DATE

PROJECT:	
N.S HOSPITAL , KOLLAM	
CLIENT:	
ARCHITECTS:	
ABHILASH ARCHITECTS Near Art Of Living Ashramam Theppiladev, Kollam Kerala, India Pin- 691012 Tele No. : +914742792144 +914742792134	

Building Services (MEP) Consultants	
31/1342 D, Lal Salam Road ,Pannuruni Vythila ,PO, Cochin- 682 019 Kerala, Ph : +91484 - 4060404 , 4010111 Email : design@bhavaniconsultants.com	
TITLE :	
SECOND FLOOR-TALKBACK SYSTEM, FIRE DETECTION & ALARM SYSTEM	
DATE : 23.09.2021	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.
DRAWN : JINU	DRAWING NO : 1789-F-6.04
CHECKED : SS	PROJECT NO : BH-NSH/1789
APPROVED : AD	REVISION : RO
SCALE : 1:75	SHEET-A1



LEGENDS	
FACP	FIRE ALARM CONTROL PANEL
	MANUAL CALL POINT
	ELECTRONIC HOOTER
	MULTI SENSOR DETECTOR BELOW CEILING
	MULTI SENSOR DETECTOR ABOVE CEILING
	HEAT DETECTOR
	FLOW SWITCH
	JUNCTION BOX
	MONITOR MODULE
	TWO WAY TALK BACK SPEAKER

ISSUED FOR:		
TENDER PURPOSE		
REV	DESCRIPTIONS	DATE

PROJECT:	
N.S HOSPITAL , KOLLAM	
CLIENT:	

ARCHITECTS:	
ABHILASH ARCHITECTS Near Art Of Living Adressam Thoppil Kadavu, Kollam Kerala, India Pin- 691012 Tele No: +914742792144 +914742792134	
 ABHILASH ARCHITECTS ART PRECIOUS DESIGN	

Building Services (MEP) Consultants	
 BHAVANI CONSULTANTS	
31/1342 D, Lal Salam Road, Pannurumthi Vyttila P.O, Cochin- 682 019 Kerala. Ph: +91484 - 4040404, 4010111 Email: design@bhavaniconsultants.com	

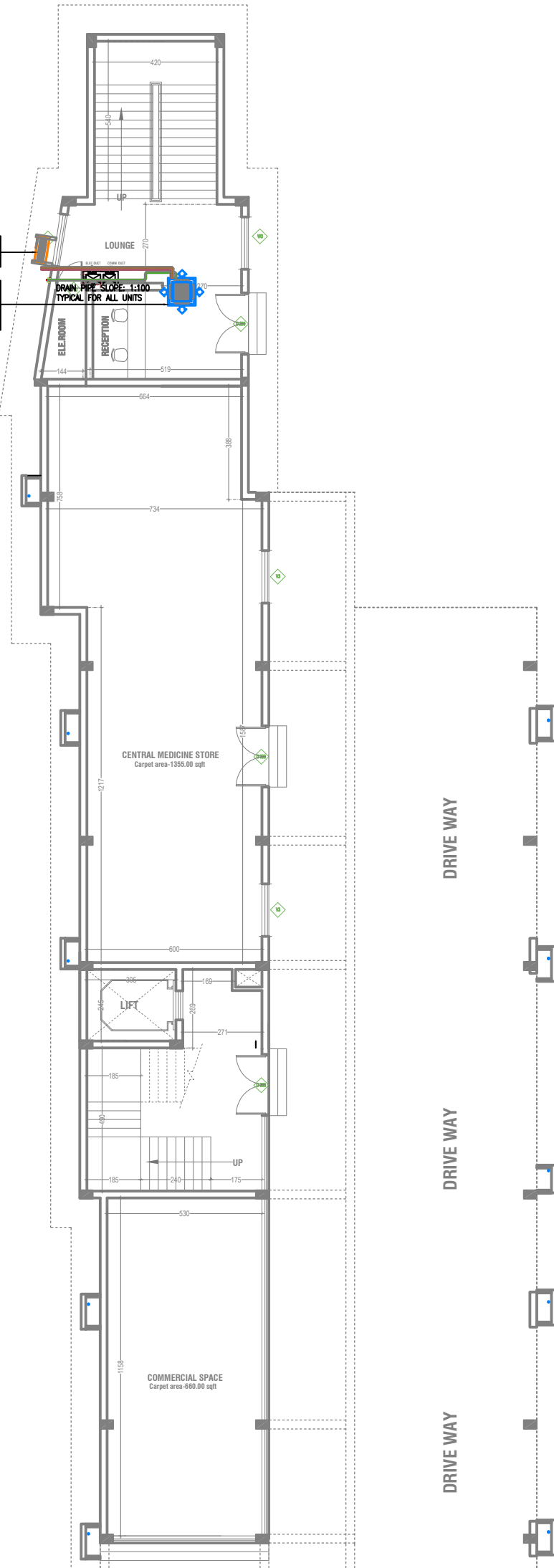
TITLE :	
THIRD & FOURTH FLOOR-TALKBACK SYSTEM, FIRE DETECTION & ALARM SYSTEM	
DATE : 23.09.2021	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.
DRAWN : JINU	CHECKED : SS
APPROVED : AD	DRAWING NO : 1789-F-6.05
SCALE : 1:75	PROJECT NO : BH-NSH/1789
REVISION : R0	SHEET-A1

THIR
Plin

MEP DRAWINGS – A.C.

4W CAS-02 ODU
DM:90Wx400x95H
QUANTITY:1NO.

4W CAS-02
CAP:2.5 TR
APR:850 CFM
DM:95Wx950x30H
QUANTITY:1NO.



HVAC LEGENDS	
	1.0 TR HWMALL SPLIT UNIT
	1.5 TR HWMALL SPLIT UNIT
	2.0 TR HWMALL SPLIT UNIT
	4 WAY CASSETTE SPLIT UNIT
	OUTDOOR UNIT
	REFRIGERANT PIPES
	CONDENSATE DRAIN PIPE

ISSUED FOR:

TENDER PURPOSE

REV	DESCRIPTIONS	DATE

PROJECT:

N.S HOSPITAL , KOLLAM

CLIENT:

**M/s N.S.MEMORIAL INSTITUTE OF MEDICAL SCIENCE
PALATHARA,KOLLAM**

ARCHITECTS:

ABHILASH ARCHITECTS
Near Art Of Living Adrisham
Thoppikkadavu, Kollam
Kerala, India
Pin- 691012
Tele No: +914742782144
+914742782134

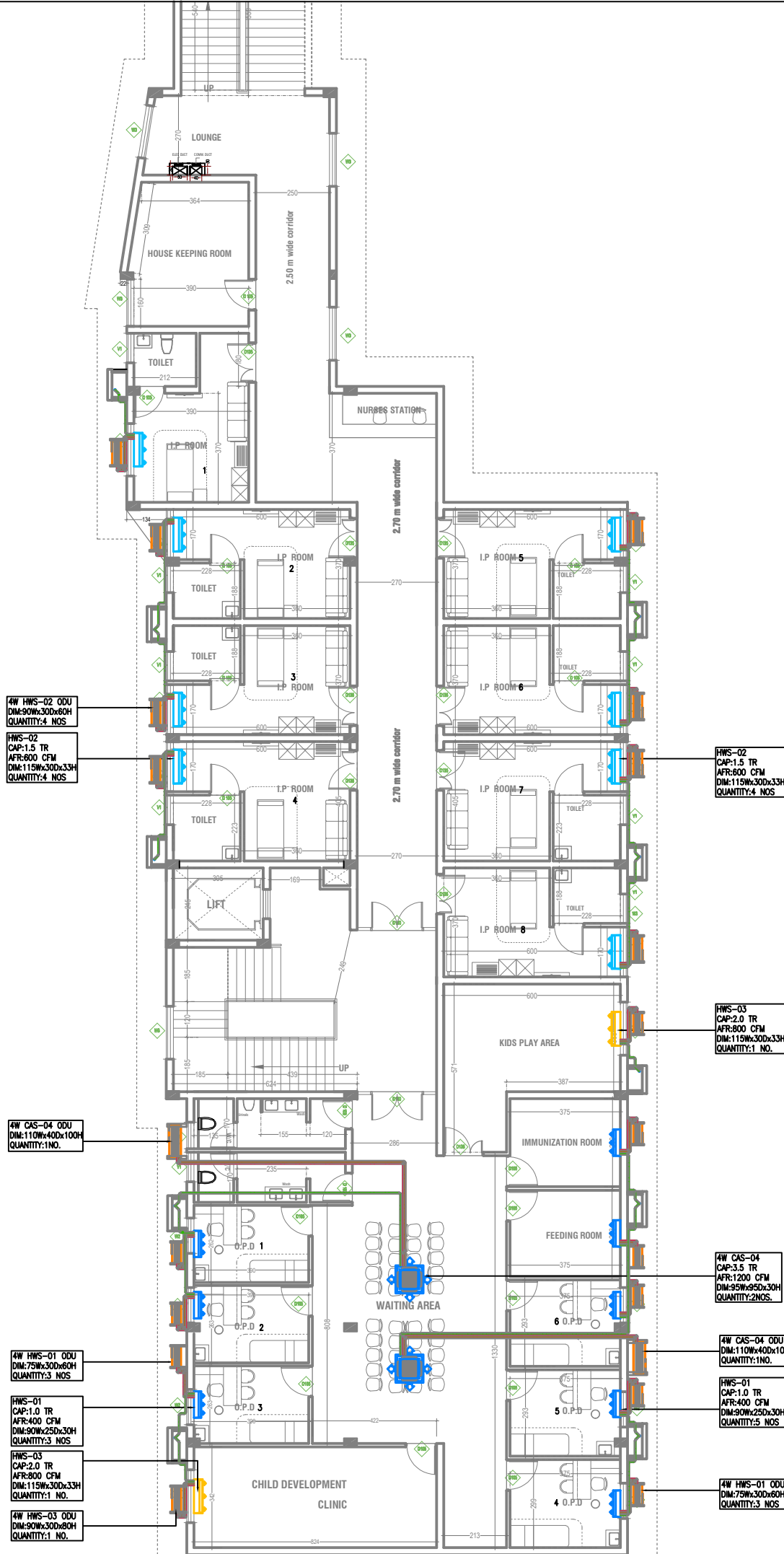
Building Services (MEP) Consultants

31/1342 D, Lal Solam Road ,Pannurur
Vyttila ,PO, Cochin- 682 019 Kerala.
Ph: +91484- 4060404 , 4010111
Email : design@bhavaniconsultants.com

TITLE :

GROUND FLOOR AC LAYOUT

DATE : 23.09.2021	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.
DRAWN :	DRAWING NO : 1789-AC-1.1
CHECKED :	PROJECT NO : BH-NSH/1789
APPROVED : AD	REVISION : R0
SCALE : 1:100	SHEET-A2



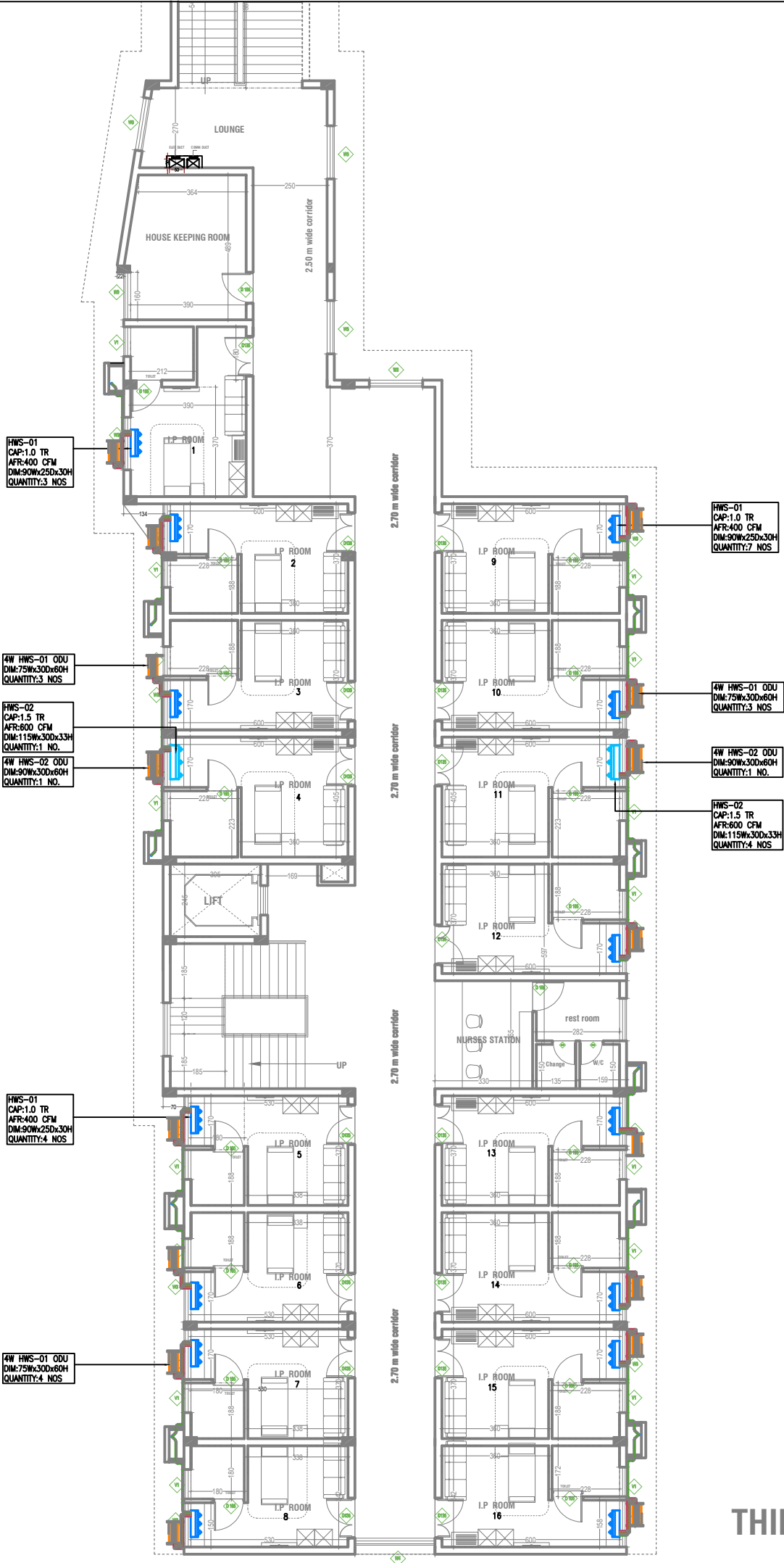
HVAC LEGENDS	
	1.0 TR HWALL SPLIT UNIT
	1.5 TR HWALL SPLIT UNIT
	2.0 TR HWALL SPLIT UNIT
	4 WAY CASSETTE SPLIT UNIT
	OUTDOOR UNIT
	REFRIGERANT PIPES
	CONDENSATE DRAIN PIPE

ISSUED FOR:		
TENDER PURPOSE		
REV	DESCRIPTIONS	DATE

PROJECT:	
N.S HOSPITAL , KOLLAM	
CLIENT:	
M/s N.S.MEMORIAL INSTITUTE OF MEDICAL SCIENCE PALATHARA,KOLLAM	
ARCHITECTS:	
ABHILASH ARCHITECTS Near Act Of Living Adressam Thoppilkadavu, Kollam Kerala, India Pin- 691012 Tele No. : +914742782144 +914742782134	

Building Services (MEP) Consultants	
BHAVANI CONSULTANTS	
31/1342 D, Lal Solam Road, Ponnuruni Vyttila, P.O, Cochin- 682 019 Kerala. Ph: +91484-4060404, 4010111 Email: design@bhavaniconsultants.com	
TITLE :	
SECOND FLOOR AC LAYOUT	
DATE :	23.09.2021
DRAWN :	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.
CHECKED :	DRAWING NO : 1789-AC-1.3
APPROVED: AD	PROJECT NO : BH-NSH/1789
SCALE : 1:100	REVISION : R0
	SHEET-A2

SE
Plinth A



HVAC LEGENDS	
	1.0 TR HWALL SPLIT UNIT
	1.5 TR HWALL SPLIT UNIT
	2.0 TR HWALL SPLIT UNIT
	4 WAY CASSETTE SPLIT UNIT
	OUTDOOR UNIT
	REFRIGERANT PIPES
	CONDENSATE DRAIN PIPE

ISSUED FOR:		
TENDER PURPOSE		
REV	DESCRIPTIONS	DATE

PROJECT:
N.S HOSPITAL , KOLLAM

CLIENT:
**M/s N.S.MEMORIAL INSTITUTE OF MEDICAL SCIENCE
PALATHARA,KOLLAM**

ARCHITECTS:
ABHILASH ARCHITECTS
Near Act Of Living Admstrm
Thoppilakadavu, Kollam
Kerala, India
Pin- 691012
Tele No. : +914742782144
+914742782134

Building Services (MEP) Consultants
BHAVANI CONSULTANTS
31/1342 D, Lal Salam Road ,Pannurur,
Vyttila ,PO, Cochin- 682 019, Kerala.
Ph : +91 484 - 4060404 , 4010111
Email : design@bhavaniconsultants.com

TITLE :
THIRD FLOOR AC LAYOUT

DATE : 23.09.2021	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.
DRAWN :	CHECKED :
APPROVED : AD	PROJECT NO : BH-NSH/1789
SCALE : 1:100	REVISION : R0
	SHEET-A2

THIRD
Plinth Ar

HVAC LEGENDS	
	1.0 TR Hwall Split Unit
	1.5 TR Hwall Split Unit
	2.0 TR Hwall Split Unit
	4 Way Cassette Split Unit
	OUTDOOR UNIT
	REFRIGERANT PIPES
	CONDENSATE DRAIN PIPE



ISSUED FOR:		
TENDER PURPOSE		
REV	DESCRIPTIONS	DATE
PROJECT:		
N.S HOSPITAL , KOLLAM		
CLIENT:		
M/s N.S.MEMORIAL INSTITUTE OF MEDICAL SCIENCE PALATHARA,KOLLAM		
ARCHITECTS:		
ABHILASH ARCHITECTS Near Art Of Living Adrisham Thoppilkadavu, Kollam Kerala, India Pin- 691012 Tele No: +914742782144 +914742782134		
Building Services (MEP) Consultants		
31/1342 D, Lal Salam Road ,Pannurur Vythila ,PO, Cochin- 682 019 Kerala. Ph : +91484 - 406404 - 4010111 Email : design@bhavaniconsultants.com		
TITLE :		
FOURTH FLOOR AC LAYOUT		
DATE : 23.09.2021	ALL DIMENSIONS ARE IN CM UNLESS OTHERWISE SPECIFIED.	
DRAWN :		
CHECKED :	DRAWING NO : 1789-AC-1.5	
APPROVED : AD	PROJECT NO : BH-NSH/1789	
SCALE : 1:100	REVISION : R0	SHEET-A2

PART B

BILL OF QUANTITIES

ABSTRACT ESTIMATE TO ACCOMPANY THE DESIGN OF PROPOSED MOTHER & CHILD BLOCK AT N.S. HOSPITAL

PART I - CIVIL & FINISHING WORKS

SL.NO	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
A	CIVIL AND STRUCTURAL WORK				
1.00	Mobilising, boring and concreting cast in -situ DMC RCC piles below ground level using CRAWLER MOUNTED HYDRAULIC RIG as per structural details and drawings, reinforced to the complete length as per relevant IS code of practice construction of pile foundation IS 2911 (part 1 section 2) 1979 with upto date corrections and revisions to the specified depth including boring holes of required size and depth including chiselling the hard rock for seating the pile base, 200mm, as per structural drawing, dewatering if required, treating the hole with appropriate drilling mud flushing of the bored hole adequately as per IS specification including verification of the density of drilling mud and filling the bore holes with cement concrete using 20mm graded granite aggregate and Msand in M20 Mix in volume and levelling the concrete upto the cut off level conveyance of stone aggregates, sand, tools ,and plants, charges for fabricating tying and placing reinforcement in position including cost of binding wire etc..complete but excluding the cost of Steel & Cement. including the cost of free boring upto the cutoff level (Approx. Length of pile 16mtr)				
	a) 50cm Dia	RM	64.00		
	b) 60cm Dia	RM	1536.00		
	c) 70cm Dia	RM	96.00		
2.00	Mobilising and conducting Vertical Load Test in a single pile as per IS2911 PART-4 latest revision by making Kent edge/platform inclusive of all material equipments and labour etc. all complete including the cost of loading material River sand/Msand/metal. (70cm dia.pile working load is tonn)				
	a) 70cm Dia	Nos	1.00		
3.00	Chipping and removing portion of R.C.C Piles carefully without damaging the remaining structure and removing the debris within a distance of 100m including the cost of material,machineries,tools&tackles and labour charge etc. all complete				
	a) 50cm Dia	RM			
	b) 60cm Dia	RM			
	c) 70cm Dia	RM			

SL.NO	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
A	CIVIL AND STRUCTURAL WORK				
4.00	Earth work excavation manually /mechanically in below ground level for all kind of works in all types of soils except laterite, Soft rock and Hard rock for a depth up to 3.00 m including removal of vegetation, shrubs and debris, cutting and dressing of sides in slopes, leveling, grading and ramming of bottoms, dewatering of accumulated water from any source and keeping the surface dry for subsequent works and disposal or stacking of excavated material within a lead of 100m including providing temporary supports bailing out of water etc...all complete	Cum	289.34		
4.01	Earth work excavation manually /mechanically in below ground level for all kind of works in laterite, Soft rock except Hard rock for a depth up to 3.00 m including removal of vegetation, shrubs and debris, cutting and dressing of sides in slopes, leveling, grading and ramming of bottoms, dewatering of accumulated water from any source and keeping the surface dry for subsequent works and disposal or stacking of excavated material within a lead of 100m including providing temporary supports.	Cum	RO		
4.02	Earth work excavation manually /mechanically in below ground level in Hard rock for a depth up to 3.00 m including removal of vegetation, shrubs and debris, cutting and dressing of sides in slopes, leveling, grading and ramming of bottoms, dewatering of accumulated water from any source and keeping the surface dry for subsequent works and disposal or stacking of excavated material within a lead of 100m including providing temporary supports.	Cum	RO		
5.00	Back Filling with quality red soil brought from outside free of tree roots, debris, organic matters etc. in layers not exceeding 20cm in depth consolidating each deposited layers by mechanical compaction and watering rolling including all lead & lift inside the plinth, Measurements will be taken only for the filled and compacted earth.	Cum	147.20		
5.01	Back Filling with available cut earth in layers not exceeding 20cm in depth consolidating each deposited layers by mechanical compaction and watering including re excavating the deposited soil excavated earlier ,breaking loads ,laying at all depths and heights in layers of thickness not exceeding 20cms watering rolling and ramming by manual methods/mechanical compactors to achieve 90% laboratory maximum dry density, dressing ,trimming etc .in foundations .plinths .trenches .pits etc all complete	Cum	RO		
6.00	Conveying and disposal of excavated Earth and debris including surplus earth and vegetations from construction area beyond the initial lead of 100mtr and up to 5km away from the Site including re-excavating the deposited soil excavated earlier ,transportation, loading ,unloading, laying at all depths and heights. Stacking .leveling and dressing both the area .(Disposing area has to be selected by the Contractor at his own risk and Cost)to required levels and slopes complete with all lifts as directed by the Engineer-in-charge(Volume of Truck reduced by 30% or voids)	Cum	RO		

SL.NO	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
A	CIVIL AND STRUCTURAL WORK				
7.00	Providing and laying PCC 1:5:10 using 40mm and down grade hard granite broken stone and M-sand 1st quality machine mixed for foundation/flooring bed including ,compacting, curing, cost,conveyance of all materials and all labour charges etc. but excluding cost of cement.				
	a) Pile cap, Plinth beam	Cum	40.35		
	b) Floor	Cum	97.63		
8.00	Providing and laying R.C.C. M25 or specified grade for Pile cap, Retaining wall, Sump/Drain Wall, Plinth Beams as per structural design using 20 mm and down grade hard granite broken stone and M-sand 1st quality machine mixed and mechanically vibrated including all form work, watering, curing, deshuttering form work,cost, conveyance of all materials and all labour charges etc. complete for the following items. But excluding cost of Cement & Steel reinforcement.				
	a) Pile Cap	Cum	173.39		
	b) Retaining Wall	Cum	5.17		
	c) Sump/Drain/STP/OH Tamk/Lift vertical wall				
	i) UG Sump & STP	Cum	217.00		
	ii) Water Tank	Cum	60.00		
	d) Plinth Beams	Cum	30.51		
9.00	Providing and laying R.C.C. M35 or specified grade for Columns as per structural design using 20 mm and down grade hard granite broken stone and M-sand 1st quality machine mixed and mechanically vibrated including all form work, watering, curing, deshuttering form work,cost, conveyance of all materials and all labour charges etc. complete for the following items. But excluding cost of Cement & Steel reinforcement.				
	a) Ground Floor	Cum	27.36		
	b) 1st floor	Cum	21.18		
	c) 2nd Floor	Cum	21.18		
	d) 3rd floor	Cum	21.18		
	e) 4th floor	Cum	21.18		
	f) Terrace Floor	Cum	5.32		
10.00	Providing and laying R.C.C. M25 or specified grade for Ramp as per structural design using 20 mm and down grade hard granite broken stone and M-sand 1st quality machine mixed and mechanically vibrated including all form work, watering, curing, deshuttering form work,cost, conveyance of all materials and all labour charges etc. complete for the following items. But excluding cost of Cement & Steel reinforcement.				
	a) Ground Floor	Cum			

SL.NO	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
A	CIVIL AND STRUCTURAL WORK				
11.00	Providing and laying R.C.C. M25 or specified grade for Beams as per structural design using 20 mm and down grade hard granite broken stone and M-sand 1st quality machine mixed and mechanically vibrated including all form work, watering, curing, deshuttering form work, cost, conveyance of all materials and all labour charges etc. complete for the following items. But excluding cost of Cement & Steel reinforcement.				
	a) Ground Floor	Cum	43.52		
	b) 1st floor	Cum	62.08		
	c) 2nd Floor	Cum	61.49		
	d) 3rd floor	Cum	61.49		
	e) 4th floor	Cum	61.49		
	f) Terrace Floor	Cum	8.49		
12.00	Providing and laying R.C.C. M25 or specified grade for Slab as per structural design using 20 mm and down grade hard granite broken stone and M-sand 1st quality machine mixed and mechanically vibrated including all form work, watering, curing, deshuttering form work, cost, conveyance of all materials and all labour charges etc. complete for the following items. But excluding cost of Cement & Steel reinforcement.				
	a) Ground Floor	Cum	57.39		
	b) 1st floor	Cum	85.97		
	c) 2nd Floor	Cum	85.97		
	d) 3rd floor	Cum	85.97		
	e) 4th floor	Cum	85.97		
	f) Terrace Floor	Cum	8.83		
13.00	Providing and laying R.C.C. M25 or specified grade for Lintel, Sunshade and Stair as per structural design using 20 mm and down grade hard granite broken stone and M-sand 1st quality machine mixed and mechanically vibrated including all form work, watering, curing, deshuttering form work, cost, conveyance of all materials and all labour charges etc. complete for the following items. But excluding cost of Cement & Steel reinforcement.				
	a) Ground Floor	Cum	17.20		
	b) 1st floor	Cum	19.41		
	c) 2nd Floor	Cum	26.24		
	d) 3rd floor	Cum	28.58		
	e) 4th floor	Cum	28.58		
	f) Terrace Floor	Cum	1.99		
14.00	Providing and laying R.C.C. M20 for parapet wall using 20mm nominal size broken stone machine mixed including all form work, watering, curing, deshuttering form work, cost, conveyance of all materials and all labour charges etc. complete for the following items. But excluding cost of Cement & Steel reinforcement.	RM	119.7		

SL.NO	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
A	CIVIL AND STRUCTURAL WORK				
15.00	Reinforcement work with Fe 500 or specified compressive strength TMT steels for R.C.C works bent, tied and placed in position including cleaning the existing dowel rods, overlapping or welding wherever necessary as per the direction of engineer in charge including cost of 18gauge GI binding wire and conveyance of all materials and all labour charges etc complete but excluding cost of steel.				
	a) Ground Floor	Kg	25793.03		
	a1)Pile	Kg	348165.00		
	a2)Pile cap	Kg	26083.50		
	b) 1st floor	Kg	23469.09		
	c) 2nd Floor	Kg	23995.18		
	d) 3rd floor	Kg	24205.38		
	e) 4th floor	Kg	24205.38		
	f) Terrace Floor	Kg	3360.91		
16.00	Providing and constructing Brick / Block masonry wall in cement mortar 1:6 (1 cement: 6 M-sand) 23 cm thick with country burnt high quality wirecut bricks of appoved size 23cmx11cmx11cm well soaked, necessary scaffolding, curing, racking of joints etc cost, conveyence of all materials and all labour charges complete Excluding cost of cement etc complete for superstructure. Bricks to be approved by the engineer in charge.				
	a) Ground floor	Cum	155.86		
	b) 1st floor	Cum	165.19		
	c) 2nd floor	Cum	265.99		
	d) 3rd floor	Cum	319.67		
	e)4th floor	Cum	319.67		
	f) Terrace Floor	Cum	34.63		
17.00	Plastering inside face of wall CM 1:5 12mm thick one coat floated hard and trowelled and brushed smooth including scaffolding, curing etc using chicken mesh wherever necessary at joints between masonry ,column and beam including cost conveyence of all materials and all labour charges etc.. complete Excluding cost of cement as directed from the Engineer in charge. (With Plastering M-sand)				
	a) Ground floor	Sqm	978.77		
	b) 1st floor	Sqm	1474.19		
	c) 2nd floor	Sqm	2281.35		
	d) 3rd floor	Sqm	2621.41		
	e)4th floor	Sqm	2621.41		
	f) Terrace Floor	Sqm	185.82		
18.00	Plastering with cement mortar 1:5, 12mm thick to external walls , parapet & drop slab at all heights, floated hard and trowelled to get a smooth finish, including drip coarse, grooves, scaffolding at any height, curing etc. complete as directed by the Engineer in charge. Excluding the cost of cement. (With Plastering M-sand)				
	a) Ground floor	Sqm	497.95		

SL.NO	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
A	CIVIL AND STRUCTURAL WORK				
	b) 1st floor	Sqm	462.88		
	c) 2nd floor	Sqm	515.88		
	d) 3rd floor	Sqm	519.37		
	e)4th floor	Sqm	519.37		
	f) Terrace Floor	Sqm	144.57		
19.00	Plastering with cement mortar 1:4, 9 mm thick for ceiling of rooms, columns, beams, stair etc, floated hard and trowelled to get a smooth finish, including drip coarse, grooves, scaffolding at any height, curing etc. complete as directed by the Engineer in charge. Excluding the cost of Cement. (With Plastering M-sand)				
	a) Ground floor	Sqm	327.10		
	b) 1st floor	Sqm	687.75		
	c) 2nd floor	Sqm	687.75		
	d) 3rd floor	Sqm	687.75		
	e)4th floor	Sqm	687.75		
	f) Terrace Floor	Sqm	73.56		
20.00	Plastering with cement mortar 1:3, 20mm thick to sunken slabs , after water proofing compound, floated hard and trowelled to get a smooth finish, curing etc. complete as directed by the Engineer in charge. Excluding the cost of cement. (With Plastering M- sand)				
	a) Ground floor	Sqm	-		
	b) 1st floor	Sqm	17.46		
	c) 2nd floor	Sqm	52.94		
	d) 3rd floor	Sqm	68.29		
	e)4th floor	Sqm	68.29		
	f) Terrace Floor	Sqm	-		
	g) Water tank level	Sqm	24.79		
21.00	Random rubble masonry in cement mortar 1:6 for foundation of retaining wall including simultaneous pointing of the exposed faces during the course of execution with all cost of materials and labour charges for curing etc. including all leads and lifts etc. complete (Exclusive the cost of cement) as directed by the Engineer in charge	Cum			
22.00	Providing and laying 75mm thick PCC COPING over 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand), including grouting the joints with white cement and applying water proofing compound etc. complete (Exclusive the cost of cement).	Rm	RO		
23.00	Providing & laying 3 " uPVC pipes for weep holes to the retaining wall as per drawings	Rm	RO		
24.00	Supplying and fixing GI pipes for cattle trap with necessary frame work to the entry portion of ramp etc. complete as per drawing	Kg	RO		
25.00	Providing and fixing(GISHEET/Rubber sheet Water stopper 8mmthick) 150mm wide ,				
	a) Retaining Wall	RM	RO		

SL.NO	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
A	CIVIL AND STRUCTURAL WORK				
	b) Lift wall	RM	RO		
	c) Sump Tank	RM	RO		
	d) S.T.P side walls	RM	RO		
	e) Over head water tank	RM	RO		
26.00	Making Borders / Water cutting in CM 1:3 with neat cement Flushing Coat including cost and conveyence of all meterials and all labour charges,scaffolding,curing etc Complete. Excluding cost of Cement				
	Water Cuttings				
	a) Ground floor	Rm	RO		
	b) 1st floor	Rm	RO		
	c) 2nd floor	Rm	RO		
	d) 3rd floor	Rm	RO		
	e) 4th floor	Rm	RO		
	f) Terrace Floor	Rm	RO		
27.00	Providing and laying Screed Concreting in 1:3:6 using 6mm grade hard broken stone machine mixed mechanically vibrated including all form work watering ,Curing cost of Conveyence and all labour charges etc Complete but excluding cost of cement & reinforcement				
	a) Ground floor	Sqm	RO		
	b) 1st floor	Sqm	RO		
	c) 2nd floor	Sqm	RO		
	d) 3rd floor	Sqm	RO		
	e) 4th floor	Sqm	RO		
	f) Terrace Floor	Sqm	RO		
28.0	Labour Supply				
	Providing nominal Muster role for the following labours (8 hours working time) for use works like chipping cleaning etc.				
	a) Mason	Head			
	b) Male Coolie	Head			
	c) Female Coolie	Head			
29.00	Material supply				
	Material rate to be considered for the following items at site of work.				
	a) River sand	Cum			
	b) 20mm metal	Cum			
	c) 40mm metal	Cum			
	d) Rubble	Cum			
	e) Laterite	Each			
	f) Wire cut brick	Each			
	g) Cement	Bag			
	h) Cement solid block - 35x20x10cm	Each			
	i) Quarry dust	Cum			
	j) Steel	Kg			
	k) M sand	Cum			

SL.NO	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
A	CIVIL AND STRUCTURAL WORK				
30.00	Water Proofing in retaining wall and floor				
	Providing and laying of 1.5 mm thick self adhesive, cold applied waterproofing membrane comprising of a self adhesive rubberized asphalt with cross laminated HDPE film topped with solar reflective film, SmartCare Self Adhesive SBS Membrane with HDPE lining or approved equivalent, confirming to the requirements of DIN EN 1849-1 for thickness with a puncture resistance of >220 N/cm as per ASTM D5147, puncture resistance of 200N as per ASTM E 154, providing ancillary products and finish complete including cleaning the surface, priming the surface with cold applied bituminous primer. The membrane should be sealed properly at joints & maintaining 75 mm overlap between the membrane selvage & 100 mm overlap on the end joints of the membrane over the surface etc., complete as per manufacturers				
	a) Ground floor	Sqm	339.78		
	b) 1st floor	Sqm	96.70		
	c) 2nd floor	Sqm	247.78		
	d) 3rd floor	Sqm	304.49		
	e) 4th floor	Sqm	304.49		
B	FINISHING WORKS				
31.00	PAINTING				
31.01	Providing and applying one coat interior cement primer, two coats cement based putty and two coat of emulsion of approved make and shade for walls and ceilings (Internal & Extrenal) including preparing plastered surface by rubbing smooth with pumice stone or fine sand paper (Size 80 to 120), filling the patch holes and levelling the depressions with level coarse putty to get an even surface. The rates including scaffolding, covering the finished floors by using plastic sheet, cleaning, washing of floors, all material and labour chagres etc..all complete.				
	a) Ground floor	Sqm	1803.83		
	b) 1st floor	Sqm	2624.82		
	c) 2nd floor	Sqm	3484.98		
	d) 3rd floor	Sqm	3873.89		
	e) 4th floor	Sqm	3873.89		
	f) Terrace Floor	Sqm	403.95		
31.02	Providing and applying one coat zinc chromate yellow metal primer and two coats of enamel of approved shade for Steel work area , including preparing surface by rubbing smooth with sand paper (Size 80 to 120), filling the patch holes and leveling the depression with NC metal putty. The rates including scaffolding, covering the finished floors by using plastic sheet, cleaning, washing of floors, all material and labour chagres etc..all complete.				
	a) Ground floor	Sqm	12.45		

SL.NO	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
A	CIVIL AND STRUCTURAL WORK				
	b) 1st floor	Sqm	42.89		
	c) 2nd floor	Sqm	58.20		
	d) 3rd floor	Sqm	61.35		
	e) 4th floor	Sqm	61.35		
32.00	DOOR WORKS				
32.01	Supplying and fixing DOUBLE DOORS with cheruteak wood of size 100 x 75 mm for the outer frame and shutter frames 100 x 30 mm, 150 x 30 mm centre rail and 25 mm thick plank for panels and finishing neatly as per design, 3 nos 100 mm stainless steel hinges, screws, 1 no mortise lock, copper 2 nos aluminium towerbolts, 150 mm long steel screws, door stopper, rubber bush, door closers, architrave of size 75 x 20 mm, etc. including all cost and labour charges.				
	a) Ground floor				
	200 x 210	Each	2.00		
	b) 1st floor				
	180x210	Each	1.00		
	c) 2nd floor				
	180x210	Each	1.00		
	135x210	Each	9.00		
	d) 3rd floor				
	135x210	Each	16.00		
	e) 4th floor				
	135x210	Each	16.00		
32.02	Supplying and fixing SINGLE DOORS with cheruteak wood of size 100 x 75 mm for the outer frame and shutter frames 100 x 30 mm, 150 x 30 mm centre rail and 25 mm thick plank for panels and finishing neatly as per design, 3 nos 100 mm stainless steel hinges, screws, 1 no mortise lock, copper 2 nos aluminium towerbolts, 150 mm long steel screws, door stopper, rubber bush, door closers, architrave of size 75 x 20 mm, etc. including all cost and labour charges.				
	a) Ground floor				
	90 x 210	Each	1.00		
	b) 1st floor				
	105x210	Each	16.00		
	90x210	Each	3.00		
	c) 2nd floor				
	105x210	Each	16.00		
	100 x 210	Each	2.00		
	90x210	Each	3.00		
	d) 3rd floor				
	105x210	Each	16.00		
	90x210	Each	2.00		
	e) 4th floor				
	105x210	Each	16.00		

SL.NO	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
A	CIVIL AND STRUCTURAL WORK				
	90x210	Each	2.00		
	f) Terrace Floor				
	105x210	Each	2.00		
32.03	Supplying and fixing at site in 12 mm saint Gobain Toughened glass automatic sliding door using dorma or equivalent make patch fittings. The door will fixing with line and level.				
	a) Ground floor				
	200 x 210	Each	1.00		
33.00	WINDOW & OPENINGS				
33.01	Supplying and fixing aluminium work for windows and ventilators with extruded built up standard tubular sections/ appropriate sections of approved make conforming to IS 733 or IS 1285 (make : Jindal or equivalent) fixing with dash fasteners including necessary filling of the gaps at junctions with EPDM rubber/ neoprene gasket, etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, aluminium snap beading for glazing/panelling, C.P. brass/stainless steel screws, all complete as per architectural drawings. (Powder coated aluminium - minimum thickness of powder coating 50 micron)				
	a) Ground floor	Sqm	12.45		
	b) 1st floor	Sqm	42.89		
	c) 2nd floor	Sqm	58.20		
	d) 3rd floor	Sqm	61.35		
	e) 4th floor	Sqm	61.35		
33.02	Supplying and fixing at site in 8 mm Toughened glass fixed at site using 63 x 38 aluminium section 25 x 25 x 1 mm square tube for glass fixing ,the glass shall be fixing with line and level, joint and wall side gap filling with clear silicon sealants (boss) and necessary items				
	a) Ground floor	sqm	46.47		
	b) First Floor	sqm	52.05		
34.00	WALL AND FLOOR FINISHING				
34.01	Laying Vitrified tiles of approved size laid on 40mm thick cement mortar 1:4 (1 cement, 4 coarse sand) for Flooring by providing horizontal and vertical Spacer (2mm/3mm/ 4mm/5mm) as per the drawings. (Rate including grouting the joints with tile grout of approved make, Leading, Lifting, Shifting, Stacking etc...including the cost of Tile, M.Sand & Spacer (Tile range upto 60/Sqft)).				
	a) Ground floor	Sqm	377.10		
	b) 1st floor	Sqm	756.53		
	c) 2nd floor	Sqm	756.53		
	d) 3rd floor	Sqm	756.53		
	e) 4th floor	Sqm	73.56		

SL.NO	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
A	CIVIL AND STRUCTURAL WORK				
34.02	Laying Vitrified glazed tile of approved size laid on Gum (approved make) on wall area by providing horizontal Spacer (2mm/3mm/ 4mm/ 5mm) as per the drawings. (Rate including necessary cutting for fixing of Switch boards,etc. and grouting the joints with tile grout of approved make, Leading, Lifting, Shifting, Stacking etc...including the cost of Tile , Gum & Spacer				
	a) 1st floor	Sqm	379.23		
	b) 2nd floor	Sqm	694.08		
	c) 3rd floor	Sqm	838.56		
	d) 4th floor	Sqm	838.56		
35.00	Supplying and fixing MS Grills for windows and ventilators including cost of materials all fittings and conveyance etc				
	a) Ground floor	Kg	249.00		
	b) 1st floor	Kg	857.70		
	c) 2nd floor	Kg	1164.00		
	d) 3rd floor	Kg	1227.00		
	e) 4th floor	Kg	1227.00		
36.00	Providing & fixing of staircase handrails as per the approved Architectural design and make. The Rate Includes all materials and labour charges etc complete..				
	a) Ground floor	Rft	70.00		
	b) 1st floor	Rft	55.00		
	c) 2nd floor	Rft	55.00		
	d) 3rd floor	Rft	55.00		
	e) 4th floor	Rft	55.00		
C	INTERIOR FURNISHING WORKS				
1.00	False ceiling- gypsum board plane & designer false ceiling of cost range upto Rs 85/sqft Gypsum board Ceiling (SAINTGOBAIN) -12mm thick single layer gypsum board fixed on suspended main Gypserra Sections 60mmx36mm and secondary grid made of 45mmX18mm all as per manufacturer's specifications including jointing, finishing with gypsum compound, jointing tape and top coat. The surface shall be duly sanded and finished. Rate shall include vertical faces of ceilings including pelmet and shall include cost of marking as/reflected ceiling plan and making all the necessary cut outs for lights, grills, diffusers etc. The rate shall also include providing perimeter channel for grills, lights, diffusers as called for in HVAC and Electrical Drawings. The rate shall also include providing for edge/angle bits at all corners, necessary taping, filling with jointing compound as per manufacturers specifications. The rate shall be exclusive of trap door which shall be paid for separately.	Sqm	3500.00		
2.00	Supplying & fixing combination of cladding tile size 30 x 30, 15 x 15 including cost of materials, labour, etc.	Sqft	1000.00		

SL.NO	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
A	CIVIL AND STRUCTURAL WORK				
3.00	Manufacturing and supplying Nursing station using Century plywood, laminates, Hettich hardware, materials, labour, etc.	Nos	1.00		
4.00	Supplying & fixing stretcher guard in common areas of the hospital using SS elliptical section of 7-10 cm thickness	Mtr	165.00		
D	EXTERIOR FACADE WORKS				
1.00	Ornamental façade using a combination of terracota jali of 2 different types - Opal, Camp				
	Make : NUVOCOTTO	Sqft	1000.00		
2.00	Supplying & laying ornamental LOPPO cladding tiles of size 60x30 for external façade	Sqft	500.00		

PART II - MEP**A. ELECTRICAL**

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
A	MV INSTALLATION					
	Switchboards					
	Design,Fabrication, Supply, Erection,Testing and Commissioning of cubicle type dust and vermin proof free standing, floor mounting panel boards as per technical specifications and drawings consisting of the following complete with powder coating etc.as per BIS and General conditions/ Technical Specifications					
1	MSB:(NEW BLOCK PANEL)					
	Incomer: 320A FP MCCB,36kA-1No.					
	Meters & Indication.					
	(a)Multifunction digital energy meter with displays for voltage and current with necessary CT's and communication port- 1 No.					
	RYB indication lamp with MCB - 1 Set.	No	1			
	SPD					
	This panel should include Surge Protection Device Class B & Class C/ Class 1 & Class 2 Tested as per IEC 61643 Part 11:2011 . Nominal voltage -230V 50/60Hz, MCOV of 275 V , Total Impulse current-50 KA (10/350μ sec) & Total Max Discharge current 200KA (8/20μ sec), Voltage protection level <1.1 kV & Residual Voltage @ 5 kA(8/20) <0.8 kV . The Surge Protection Devices should have TOV withstand for 120 Min : 438 V and with out Follow Current & Leakage Current. Protective Elements are High Energy MOV & GDT & the Protection Modes for : L & N to PE . The connections (Three Lines & Neutral) should be directly connected to Protective Earth Terminal for better response time. Short- Circuit Current rating (Iscrr) – 25 kA/50 Hz . Back up fuse required more than 160AgG/gL. Health Status Indication required in all catridge. Total Response time <25 nano sec .					
	Outgoing:-					
	100A TPN ISO -1 Nos.					
	125A TP MCCB 25kA -1 Nos.					
	100A TP MCCB 25kA -2 Nos.					
	63A TP MCCB 25kA -7 Nos.					
	All MCCB's are with, Rotary operated handle and all necessary accessories.					
	Busbar: 1 Set TPN AL bus bars suitably rated for320A.					
2	SSB-1(GF & FF)-8WAY VTPN DB					
	Incomer: 100A TPN ISOLATOR -1No.					
	Outgoing:-	Nos	1			
	25A TP MCB -3No.					
	32A TP MCB -4No.					
	63A TP MCB -1No.					
3	SSB-2 (SF & 3F)-8WAY VTPN DB					
	Incomer: 100A TPN ISOLATOR -1No.					

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
	<u>Meters & relays.</u>					
	Outgoing:-	Nos	1			
	25A TP MCB -2No.					
	32A TP MCB -4No.					
	63A TP MCB -2No.					
4	SSB-3 (4F)-4WAY VTPN DB					
	Incomer: 100A TPN MCB ISOLATOR -1No.					
	Outgoing:-	Nos	1			
	25A TP MCB -1No.					
	32A TP MCB -2No.					
	63A TP MCB -1No.					
5	SSB-4 (TERRACE DB FABRICATED)					
	Incomer :					
	40A TPN Isolator -1No					
	Meters: Digital energy meter with displays of voltage & current with necessary CT's and communication port-1 set					
	RYB indication lamp with 2A SP MCB - 1 No.					
	Out going :	No	1			
	25A TP MCB - 5 Nos					
	25A TP MCB - 2 Nos					
	16A TP MCB - 1 Nos					
	Busbar: 1 Set TPN AL bus bars suitably rated for40A					
6	Lift DB- (FABRICATED)					
	Incomer: 63A 4P MCB ISO- 1 No.					
	Outgoing :	No	1			
	32A 4 Pole RCBO 100 mA-1 No					
	25A 2 Pole RCBO 30 mA-1 No with 4 Nos 6A SP MCB 10kA					
	Indication.					
	RYB indication lamp with MCB - 1 Set.					
	Busbar:1 Set TPN CU bus bars suitably rated for 32A					
7	PUMP DB (FABRICATED)					
	Incomer:					
	63A TPN ISO. - 1 No.					
	Meters &Indication.					
	(a)Multifunction digital energy meter with displays for voltage and current with necessary CT's-1 No.					
	(b) RYB indication lamp with 2A SP MCB - 1 No.	No	1			
	Outgoing :					
	25A TP MCB-5 Nos					
	25A TP MCB-2 Nos					
	32A TP MCB-1 Nos					
	Bus bar: 1 Set TPN AL bus bars suitably rated for 63A					

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
8	UPS PANEL					
	Incomer:63A TPN MCB ISO. -1No.	No	1			
	RYB indication lamp with 2A SP MCB -3 No.					
	SPD					
	Din Rail (4+0) Surge Protection Device Class C/ Type 2 Tested as per IEC 61643 Part 11:2016 . Total Max Discharge current 200 KA (8/20μ sec), Voltage protection level <1.5 kV . The Surge Protection Devices should have TOV safefail for 120 Min : 442 V . Protective Elements are MOV & GDT & the Protection Modes for : L & N to PE . Short- Circuit Current rating (Iscrr) – 25kA/50 kA Back up fuse required more than 200AgG/gL. Health Status Indication required in all cartridge. Total Response time <25 nano sec					
	Outgoing:-					
	25A TP MCB -8Nos.					
	Busbar: 1 Set TPN AL bus bars suitably rated for 63A.					
9	Isolators & Starters					
	Supply& Installation,testing ,commisioning of following isolators with suitable enclosures ,on angle iron frame work fixed on wall					
a.	32A TPN Cubicle type Switch disconnecter with enclosure	No	5			
b.	63A TPN Cubicle type Switch disconnecter with enclosure	No	5			
10	Distribution Boards					
	Supply, Installation, Testing and Commissioning of following double door MCB DB's with necessary insulated tinned copper bus bars, interconnections, earthing and neutral terminal blocks, circuit name plate etc. DB's shall be installed flush with the wall with necessary terminal boxes for the incoming /outgoing cables/conduits.					
a	4 ROW 13 MODULE FLEXY DB	NOS	RO			
b	4 WAY VTPN DB	NOS	RO			
c	8 WAY VTPN DB	NOS	1			
c	12 WAY VTPN DB	NOS	2			
d	12 WAY TPN DB	NOS	4			
e	8 WAY TPN DB	NOS	3			
f	6 WAY TPN DB	NOS	4			
g	4 WAY TPN DB	NOS	5			
h	12 WAY SPN DB	NOS	RO			
i	8 WAY SPN DB	NOS	RO			

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
j	6 WAY SPN DB	NOS	RO			
k	4 WAY VTPN DB(IP-67 ENCLOSURE)	NOS	RO			
11	MCB, RCBO etc. for DBs					
	Supply, Installation, Testing and Commissioning of following MCB's/RCBO/MCB Isolator in above DBs and giving connections complete					
a	63A, 4P ISOLATOR	NOS	RO			
b	40A, 4P ISOLATOR	NOS	RO			
c	32A, 4P ISOLATOR	NOS	5			
d	63A 30 mA FP RCBO	NOS	7			
e	40A 30 mA FP RCBO	NOS	RO			
f	32A 30 mA FP RCBO	NOS	RO			
g	25A 30 mA FP RCBO	NOS	5			
h	16A 30 mA FP RCBO	NOS	RO			
i	25A 30 mA DP RCBO	NOS	5			
j	32A TP MCB C Curve 10 kA	NOS	4			
k	25A TP MCB C Curve 10 kA	NOS	RO			
l	6 A/16A/20A SP MCB C Curve 10 kA	NOS	360			
m	25 A SP MCB C Curve 10 kA	NOS	RO			
n	32 A SP MCB C Curve 10 kA	NOS	RO			
o	20A DP Contactor	NOS	RO			
p	32 A DP Contactor	NOS	RO			
12	CABLING AND TERMINATION					
12.1	Cabling Supply & Laying of 1100V grade, XLPE insulated, PVC sheathed, Aluminium conductor, steel armoured cables. The cable shall be laid in existing perforated cable tray / clamped on to the walls using necessary fixing accessories, The cable shall be provided with cable identification tags made out of Aluminium strip, engraved with cable size and the routing.					
	(a.)3.5x 400 sq.mm	M	RO			

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
	(b.)3.5x 300 sq.mm	M	RO			
	(c.)3.5 x 240 sq.mm	M	RO			
	(d.)3.5x 185 sq.mm	M	800			
	(e.)3.5x 150 sq.mm	M	RO			
	(f.)3.5x 120 sq.mm	M	RO			
	(g.)3.5x 95 sq.mm	M	RO			
	(h.)3.5x 70 sq.mm	M	250			
	(i.)3.5 x 50 sq.mm	M	RO			
	(j.) 3.5 x 35 sq.mm	M	300			
	(k.)4 x 25 sq.mm	M	RO			
	(l.)4 x 16 sq.mm	M	RO			
	(m.)4 x 10 sq.mm	M	50			
	(n.)4 x 6 sq.mm	M	220			
	(o.) 4 x 4 sq.mm	M	200			
	(p.)3 x 6 sq.mm	M	100			
	(q.)3 x 4 sq.mm	M	RO			
	(r.)2 x 10 sq.mm	M	RO			
	(s.)2 x 6 sq.mm	M	RO			
	(t.)2 x 4 sq.mm	M	RO			
12.2	Supply,Laying,Installation & Testing of XLPE insulated PVC sheathed 1.1kV grade Cu. cables for the following sizes. The cable shall be laid in excavated trench/ built up trench/ exsiting cable tray / pulling through existing pipes/clamped on to the walls using necessary fixing accessories and identification tags.					
	a.) 3C x 2.5 Sq.mm	M	200			
	b.) 3C x 1.5 Sq.mm	M	150			

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
	c.) 2C x 1.5 Sq.mm	M	RO			
12.3	Supply,Laying,Testing & commissioning of Cu. control cables for the following sizes.					
	a.)2C x 1.5 Sq.mm	M	RO			

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
13	Terminations					
	Supply of all materials and carrying out cable end terminations for the following cables using single compression brass cable gland,compression type aluminium crimping lugs, gland earthing of adequate size, etc. complete.					
	(a.)3.5x 400 sq.mm	Nos	RO			
	(b.)3.5x 300 sq.mm	Nos	RO			
	(c.)3.5 x 240 sq.mm	Nos	RO			
	(d.)3.5x 185 sq.mm	Nos	4			
	(e.)3.5x 150 sq.mm	Nos	RO			
	(f.)3.5x 120 sq.mm	Nos	RO			
	(g.)3.5x 95 sq.mm	Nos	RO			
	(h.)3.5x 70 sq.mm	Nos	8			
	(i.)3.5 x 50 sq.mm	Nos	RO			
	(j.)3.5x 35 sq.mm	Nos	16			
	(k.)4 x 25 sq.mm	Nos	RO			
	(l.)4 x 16 sq.mm	Nos	RO			
	(m.)4 x 10 sq.mm	Nos	2			
	(n.)4 x 6 sq.mm	Nos	14			
	(o.) 4 x 4 sq.mm	Nos	10			
	(p.)3 x 6 sq.mm	Nos	16			
	(q.)3 x 4 sq.mm	Nos	RO			
	(r.)2 x 10 sq.mm	Nos	RO			
	(s.)2 x 6 sq.mm	Nos	RO			
	(t.)2 x 4 sq.mm	Nos	RO			
	(u)3C x 2.5 Sq.mm XLPE Cu.	Nos	50			

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
	(v)3C x 1.5 Sq.mm XLPE Cu.	Nos	30			
	(w)2C x 1.5 Sq.mm XLPE Cu.	Nos	RO			
	(x)2C x 2.5 Sq.mm unarmoured Cu.	Nos	RO			
14	EARTHING					
	Design, fabrications, supply & installation of continuous earthing conductors and earth pits as per the general specifications and IS:3043/87.					
14.1	Pipe Earth Stations Providing 38 mm dia 2.5 m long GI pipe earth stations,filling salt, sand and charcoal, construction of earthchamber and covering with heavy duty Cast Iron coverhinged to Cast Iron Frame, including excavation of	Nos	RO			
	ROD EARTH STATION.					
14.2	Providing Rod Earthing using 25mm dia 6 mtr long copper coated steel electrode with all required accessories and adding earth conductivity enhancing mineral compound,construction of earth chamber and covering with heavy duty Cast Iron Cover hinged to Cast Iron Frame, including excavation of earth pit as per the technical specifications and IS.(Make :OBO/equivalent)	No	2			
14.3	Plate Earth Stations Supply of all materials and providing plate earth station with 1200 x 1200 x 12.5 mm. C.I. plate earth electrode, water pipe, earthing strips, clamps, funnel, Electrodes etc., excavation in all classes of soil,terminal filling with homogeneous mixture of charcoal and salt and back filling ,construction of Earthpit Inspection Chamber and Heavy duty C.I. Chequered plate for Earthpit Inspection Chamber cover.	No	RO			
14.4	Earth Grids Supplying & laying / fixing of earthing conductor of copper strips/wires including necessary earthing trenches, jointing as per IS:3043/87 in trenches, walls, pulling through pipes, etc					
	(a.)Copper flat 25 x 6 mm	Mtrs.	RO			
	(b.)Copper flat 25 x 3 mm	Mtrs.	250			
	(c.)Copper flat 38 x 6 mm	Mtrs.	RO			
	(d.)Copper wire No. 10 SWG	Mtrs.	1200			
	(e.)Copper wire No. 8 SWG	Mtrs.	RO			

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
	(f.)Copper wire No. 6 SWG	Mtrs.	100			
	(g.)Copper wire No. 4 SWG	Mtrs.	60			
	(h.)GI flat 50 x 6 mm	Mtrs.	RO			
	(i.)GI flat 38 x 6 mm	Mtrs.	RO			
	SUMMARY OF A					
B	Lightning Protection System					
15	Supply and Erection of Lightning Protection system with 8mm dia Aluminium conductor for horizontal air terminations and vertical down conductors with all accessories like conductor holder, test terminals, wall holders complete as per IEC / IS 62305					
	(a.)Horizontal laying on top of the building	Mtr.	160			
	(b.)Vertical down conductors including test links	Mtr.	250			
15.1	Providing and fixing of Cross Connector/T Connector: to route vertical down conductor /mesh formation made of stainless steel SS 304 grade with necessary screws etc as required. Installed with 4 hexagonal bolts with M8 hexagonal nuts according to (IS/IEC 62305)	No	20			
15.2	Providing and fixing of expansion piece with connector: For equalising temperature related length changes. Necessary on conductors length at every 20 meters horizontally. Using round conductor 8mm aluminium conductor with L or T Connector: using stainless steel SS 304 grade . Quick installation using hexagonal bolt. Conforms to the requirements according to (IS/IEC 62305)	No	40			
15.3	Vertical air terminal with accessories:Providing of Air terminals(4M)as per IS-IEC -62305 part-3 16mm rod tapered to 10 mm aluminium rod Meets the requirement of VDE0185/305(IS/IEC 62305)	No	3			
16	ROD EARTH STATION.					
16.1	Providing and laying Rod Earthing using 20mm dia 3 mtr long copper coated steel electrode with all required accessories and adding earth conductivity enhancing mineral compound,construction of earth chamber and covering with heavy duty Cast Iron Cover hinged to Cast Iron Frame, including excavation of earth pit as per the technical specifications and IS.	No	8			
16.2	Providing and laying copper bonded steel solid round conductor 10mm diameter from earth electrode directly in ground as required. copper coated steel, high corrosion resistant (if pure copper conductor 25x3mm solid tape also can be used). Meets the requirement of (IS/IEC 62305) copper coating thickness of 100microns Should be tested and use exclusively for lightning protection earthing system and ring equipotential bonding	Mtr.	200			

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
16.3	Supply and Interconnections along ground in 500mm below the ground between earthpits using 30x3mm GI strip, including excavation work in ground.	MTR	RO			
	SUMMARY OF B					
C	WIRING FOR LV SYSTEM					
17	Point Wiring Supplying all materials and carrying out wiring for lights,fan and plug points including testing and commissioning in concealed conduit system from control board to luminaries / Fans / Plug points using single core PVC insulated stranded1.1kV grade copper wire of size 1.5 sq.mm along with same size wire as earth continuity conductor through PVC rigid conduit with necessary bends, junction boxes and 6A modular type switches on metal boxes complete with ceiling roses, plugs etc. The rate shall include chipping walls,concrete floors,beams etc.and making good with cement mortarroses, plugs,making holes using drilling machine etc. (upto 5m)					
	(a.) One Light controlled by 6A switch.	Nos	275			
	(b.) One light controlled by 2 nos.6A 2 way switch.	Nos	60			
	(c.)Ceiling fan point controlled by one 6A switch & 100W step type fan regulator	No	20			
	(d.)Two Nos Ceiling fan point controlled by one 6A switch & 100W step type fan regulator	No	45			
	(e.)1 Exhaust fan controlled by 6A switch	No	75			
	(f.) Two light controlled by 6 A switch.	Nos	60			
	(g.) Three light controlled by 6 A switch.	Nos	20			
	(h.) Four light controlled by 6 A switch.	Nos	RO			
	(i.) Five light controlled by 6 A switch.	Nos	RO			
17.1	Point Wiring (5mtr-10mtr) AS described in Item 17					
	(a.) One Light controlled by 6A switch.	Nos	10			
	(b.) One light controlled by 2 nos.6A 2 way switch.	Nos	5			
	(c.)Ceiling fan point controlled by one 6A switch & 100W step type fan regulator	No	RO			
	(d.) Two light controlled by 6 A switch.	Nos	RO			
	(e.) Three light controlled by 6 A switch.	Nos	RO			

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
	(f.) Four light controlled by 6 A switch.	Nos	10			
	(g.) Five light controlled by 6 A switch.	Nos	RO			
	(h.) Six light controlled by 6 A switch.	Nos	RO			
	(i.) Seven light controlled by 6 A switch.	Nos	RO			
	(j.) Eight light controlled by 6 A switch.	Nos	RO			
17.2	Point Wiring (10mtr-15mtr) AS described in Item 17					
	(a.) Two light controlled by 6 A switch.	Nos	RO			
	(b.) Three light controlled by 6 A switch.	Nos	5			
	(c.) Four light controlled by 6 A switch.	Nos	RO			
	(d.) Five light controlled by 6 A switch.	Nos	5			
	(e.) Six light controlled by 6 A switch.	Nos	RO			
	(f.) Seven light controlled by 6 A switch.	Nos	RO			
	(g.) Eight light controlled by 6 A switch.	Nos	RO			
	(h.) Ten light controlled by 6 A switch.	Nos	RO			
17.3	Point Wiring (15mtr-20mtr) AS described in Item 17					
	(a.) Two light controlled by 6 A switch.	Nos	RO			
	(b.) Three light controlled by 6 A switch.	Nos	RO			
	(c.) Four light controlled by 6 A switch.	Nos	RO			
	(d.) Five light controlled by 6 A switch.	Nos	RO			
	(e.) Six light controlled by 6 A switch.	Nos	5			
	(f.) Seven light controlled by 6 A switch.	Nos	5			
	(g.) Eight light controlled by 6 A switch.	Nos	RO			
	(h.) Ten light controlled by 6 A switch.	Nos	RO			
	(i.) Eleven light controlled by 6 A switch.	Nos	RO			

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
	(j.) Twelve light controlled by 6 A switch.	Nos	RO			
	(k.) Thirteen light controlled by 6 A switch.	Nos	RO			
	(l.)Fifteen light controlled by 6 A switch.	Nos	RO			
17.4	Supply and fixing of Junction box type fan hook of good quality and complete work.	No	80			
18	Circuit Mains					
	Supply and wiring from DBs to switch boards using following 2 runs of single core PVC insulated 1.1kV grade copper wire along with same size copper wire as earth conductor through 20/25 mm pvc rigid Conduit in concealed system. The rate shall include chipping walls,concrete floors,beams etc.and making good with cement mortarroses, plugs,making holes using drilling machine etc.					
	(a.)2.5 Sq. mm	Mtr	6000			
	(b.)4.0 Sq. mm	Mtr	3000			
18.1	Fixing of Sockets					
	Supply and fixing of following modular type Power switches& sockets in standard metal boxes concealed on wall and giving connections complete. The rate shall include chipping walls,concrete floors,beams etc.and making good with cement mortarroses, plugs,making holes using drilling machine etc					
	(a.)16A switch Socket with indicator	No	100			
	(b.)20A DP Switch with Socket	No	80			
	(c.)16A Switch with indicator	No	RO			
	(d.)16A 3pin Socket	No	80			
	(D.)6A 5pin Socket	No	475			
19	Power Sockets					
	Supply& Installation,testing ,commisioning of following factory made metal clad enclosed with cast aluminium housing with industrial socket/interlocked combined rotary switch and socket with scrapping earth connection and plug top					
a)	20 Amps, 3-pin single phase IP 66/67 industrial socket with plug top, controlled by 20 Amps DP MCB.	No	5			
b)	20 Amps, 3-pin three phase IP 66/67 industrial socket with plug top, controlled by 20 Amps DP MCB.	No	10			
c)	32 Amps, 5-pin (440V) three phase industrial socket with plug top, controlled by 32 Amps, TPN MCB.	No	5			
20	Fixing of Sockets					

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
	Computer Power Socket (2Nos.6Asocket & 2No.6Aswitch)	No	30			
	SUMMARY OF C					
D	Light Fixtures, Fans etc.					
21	Labour charges for, fixing, testing and commissioning on roof/truss/ceiling/wall of the following light fixtures/fans with all necessary ball and sockets, rackets, down rods and 3-core flexible wires etc.					
	(a.)Street light post 9m long M.S.with single 150W MH lamp	Nos	RO	CLLIENT SCOPE		
	(b.)1x 8w Recess mounted downlighter	Nos	60			
	(c.)1x 18w Recess mounted downlighter	Nos	300			
	(d.)1x 27w Recess mounted downlighter	Nos	60			
	(d.)1x 32w Recess mounted downlighter	Nos	20			
	(e.)1x18wLED tube light fixture	Nos	10			
	(f.)Bracket light fixture	Nos	10			
	(g.)Bulkhead light fixture	Nos	6			
	(h.)Mirror light fixture	Nos	45			
	(i.)bollards	Nos	20			
	(j.)1200 mm sweep ceiling fan with double ball bearing with suitable down rod.	Nos	85			
	(k.)900 mm sweep ceiling fan with double ball bearing with suitable down rod.	Nos	RO			
	(l.)Wall Fan	Nos	5			
	(m.)Exhaust fan light duty 9"	Nos	40			
	(n.)Installation of gate top light	No	2			
	SUMMARY OF D					
E	Miscellaneous					

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
22	Supplying and fixing of 'DANGER' / 'NO ADMISSION' (1 set) boards made out of MS sheet metal with two coats of non-corrosive enamelled paint, with size 100mm X 150mm or as per the local authority's requirement and all as required,directed and approved by /Engineer-in-charge	No	3			
23	Supplying and fixing of 'Shock treatment charts' on wall with plastic sheet cover and plywood backplate,framework complete in A0 size or as approved by the Electrical Inspectorate, and all as required,directed and approved by the Engineer-in-charge	No	1			
24	Supply and laying of 11kV grade Synthetic Insulated mat 2 meter x 1 meter conforming to IS:15652:2006	No	RO			
25	Supply and laying of 440V grade Synthetic Insulated mat 2 meter x 1 meter conforming to IS:15652:2006	No	2			
26	Supply and erection of DCP type fire extinguisher 5 Kg.	No	2			
27	Supply and laying 6mm M.S.chequered plate as per required sizes.	sq.m	5			
28	Supply and laying 100mm M.S. ISMC channel,medium, for supporting chequered sheet/Panel Boards,with necessary welding work	M	RO			
29	Supplying, fabricating and fixing of MS structural work using MS angles, channels, square bars, plates etc. including cutting, grouting, welding as required and directed for support/mounting electrical equipment, tray and other accessories. The cost shall include two or more coats of epoxy paint over a coat of epoxy primer in conformity with specifications, and all as required, directed and approved by Engineer-incharge.	KG	1500			
30	Supply and providing fire sealant mortar with 15 cm thickness for fire proof partion between floors in the electrical ducts	SQ.M	20			
31	Supply and Installation of factory fabricated Wire Mesh Cable tray of following sizes as per specifications with all required accessories .					
	(a.)150x55 mm	Mtr	RO			
	(b.)200x55 mm	Mtr	RO			
	(c.)300x55 mm	Mtr	60			
	(d.)450x55 mm	Mtr	RO			
	(e.)600x55 mm	Mtr	RO			
32	Supply and Installation of factory fabricated GI perforated Cable tray of following sizes as per specifications with all required accessories .					
	(a.)150x60 mm	Mtr	RO			

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
	(b.)200x60 mm	Mtr	RO			
	(c.)300x60 mm	Mtr	200			
	(d.)450x60 mm	Mtr	100			
	(e.)600x60 mm	Mtr	RO			
33	Supply & Installation of factory fabricated GI Ladder Type Cable tray of following sizes as per specifications with all required accessories .					
	(a.)150x50mm	Mtr	RO			
	(b.)200x50 mm	Mtr	100			
	(c.)300x50 mm	Mtr	RO			
	(d.)450x50 mm	Mtr	30			
	(e.)600x50 mm	Mtr	RO			
34	Supply and laying of following sizes of PVC Pipes after chipping the wall/ concrete/ floor/ beams, laying in ground, replastering and restoring to the original condition. (For pulling the cables/ wires).					
	(a.)20 mm PVC Pipe.	Mtr	50			
	(b.)25 mm PVC Pipe.	Mtr	60			
	(c.)32 mm PVC Pipe.	Mtr	40			
	(d.)40 mm PVC Pipe.	Mtr	RO			
	(e.)50 mm PVC Pipe.	Mtr	RO			
35	Supply and installation of following size IP67 weather proof outdoor cable termination box					
	(a)200x100mm	No	RO			
	(b)100x100mm	No	RO			
36	JUNCTION BOX FOR LANDSCAPE LIGHTS					

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
36.1	Loop in loop out (LILO) Junction Box made up of Glass fiber-reinforced Polycarbonate for Underground application of size 93 x 93 x 55 mm. Enclosure shall have the Ingress protection of IP68 with CAST Resign Filling in order to achieve IP68 in accordance with IEC 60529. Enclosure shall have the Mechanical Impact strength of IK 08 in accordance with IEC 62262. It shall have Pre-Punched Knockouts with IP 68 polyamide cable gland/ self-membranes seal for cable entries and 5 Pole 2.5 Sqmm terminal made of Polycarbonate capable of making min 3 terminations per pole for Loop in loop out of power supply	NOS	10			
36.2	Loop in loop out (LILO) Junction Box made up of Glass fiber-reinforced Polycarbonate for Underground application of size 93 x 93 x 55 mm. Enclosure shall have the Ingress protection of IP55 with in accordance with IEC 60529 . It shall have Pre-Punched Knockouts with IP 68 polyamide cable gland/ self-membranes seal for cable entries and 5 Pole 2.5 Sqmm terminal made of Polycarbonate capable of making min 3 terminations per pole for Loop in loop out of power supply	NOS	5			
37	Providing sand cushioning and brick protection for cables (width 20 cm)as per standards. (Sand bed of minimum thickness 75mm below & above cable (Total 150mm)).	Mtr	RO			
38	Supply and installation of emergency OFF trip push button with front Glass and painted in RED Colour.	No	RO			
39	Excavation of earth & backfilling with the excavated soil	Cu.m	RO			
	SUMMARY OF E					
F	Preparation of drawings and necessary documents and submitting to the KSEB/ Electrical Inspectorate for getting service connections.	LS	1			
	SUMMARY OF F					

CLIENT:

N.S.MEMORIAL INSTITUTE OF MEDICAL SCIENCE
KOLLAM.

ARCHITECT:

M/s ABHILASH GROUP
THOPPILKADAVU ,KOLLAM

MEP CONSULTANTS:

COST SUMMARY			
ELECTRICAL INSTALLATIONS			
SL NO	DESCRIPTION		AMOUNT
A	MV INSTALLATION	:	
B	LIGHTNING PROTECTION SYSTEM	:	
C	WIRING FOR LV SYSTEM	:	
D	LIGHT FIXTURES, FANS etc	:	
E	MISCELLANEOUS	:	
F	DOCUMENTS & APPROVAL	:	
	GST	:	
	GRAND TOTAL		

B. ELV

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
A	COMMUNICATION SYSTEM					
1	Telephone Outlets					
	Supply and carrying out telephone wiring complete in concealed/open wiring system as required and detailed above, through all floors with multi pair telephone cable as below through 20mm medium grade ISI rigid PVC Conduit (The leads should be marked for identification).					
	(a.)2 pair telephone wire	Mtr	2000			
	(b.)3 pair telephone wire	Mtr	500			
	(c.)4 pair telephone wire	Mtr	RO			
2	Supply and laying armoured jelly filled telephone cables through PVC pipes/clamping to cable trays directly with necessary saddles.(The leads should be marked for identification).					
	(a.)10pair armoured	Mtr	RO			
	(b.)20pair armoured	Mtr	50			
	(c.)100pair armoured	Mtr	50			
3	Supply and fixing and connecting following modular type telephone jack in suitable MS box, concealed, for connecting telephone.					
	(a.)Single jack shuttered	No	60			
	(b.)Double jack shuttered	No	10			
4	Supply and providing telephone junction box with hinged doors fabricated out of No. 16 SWG CR sheet steel with two coat of corrosion resistant primer and painted with finish quality synthetic enamel paint. Junction box should have enough space for providing the following connectors and termination.					
	(a.)20 pair telephone connector	No	4			
	(b.)50pair telephone connector	No	RO			
	(c.)100pair telephone connector	No	1			
5	Supply and providing following steel type Telephone connector stands					
	(a.)20 pair	No	4			
	(b.)100 pair	No	1			
6	Supply and providing 10 pair telephone connectors (Make : KRONE) on above stands and providing terminations with ferrule identification of terminals	No	15			
7	TV Outlets					
	Supply and carrying out TV wiring complete in concealed/open wiring system through all floors with foam filled TV cable as detailed below through 20mm medium grade ISI rigid PVC Conduit (The leads should be marked for identification)					
	(a.)1 run RG-6	Mtr.	2000			
	(b.)1 run RG-59	Mtr.	RO			
8	Supply and fixing and connecting modular type TV co-axial socket in suitable M.S. box, for connecting TV as below					
	(a.)Single	No	60			
	(b.)Double	No	RO			
9	Supply and erection in a suitable metal boxes for providing TV junction with 1 Nos. 4 way splitters for cable TV and giving connections with connector.	No	10			
10	Data					
10.1	Supply & Laying connecting of of cat-6, UTP cable through 20mm ISI rigid PVC conduit with medium grade and necessary fixing accessories as required for LAN network.	M	500			
10.2	Supply,Fixing and connecting following modular type socket for connecting Data point.					
	Information socket - Cat 6 UTP	Nos.	27			
	SUMMARY of A					
B	CCTV SYSTEM					
11.1	Supply, Installation, testing & commissioning of Varifocal Bullet Camera with 4mm,4 MP, built-in IR LED, POE, IP 66, with all connectors and necessary accessories for mounting.	NOS	5			

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
11.2	Supply, Installation, testing & commissioning of 3.6 or 2.8 mm fixed lens, 4MP, IR Dome camera, IR, POE and with all connectors and necessary accessories for mounting in false ceiling.	NOS	12			

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
11.3	Supply, Installation, testing & commissioning of 4MP 30X IR Network PTZ camera. 1/2.8" CMOS image sensor, WDR, IR range of 150 Mtr, IP66, PoE with all connectors and necessary accessories for mounting on pole or wall.	NOS	2			
11.4	Supply, installation, testing & commissioning of 24 Channel NVR 4k, 320Mbps bandwidth, Upto 12MP Resolution, Supports 8 SATA HDD upto 8TB each, 4USB Ports	NOS	1			
11.5	Supply, installation, testing & commissioning of 8 TB HDD for 30 days (D1 resolution at 25 FPS) backup.	NOS	2			
11.6	Supply, installation, testing & commissioning of 42" LED Monitors with necessary wall mounting accessories.	NOS	2			
11.7	Supply, installation, testing & commissioning of Client PC with key board and mouse.	NOS	1			
11.8	Supply, installation, testing & commissioning of VMS for 5 User.	NOS	1			
11.9	Supply, installation, testing & commissioning of 12 PORT POE SWITCH, 24 10/100/1000 Mbps auto-sensing 10 Gigabit Ethernet 2 combo Gigabit copper/SFP slots	NOS	2			
11.1	Supply, installation, testing & commissioning of FIBER SWITCH 10Gigabit Ethernet, 24 10/100/1000 ports (SFP), 2 combo mini-GBIC ports, 8MB packet buffer.	NOS	1			
11.11	Supply, installation, testing & commissioning of SFP MODULE	PAIR	1			
11.12	Supply, installation, testing & commissioning of Patch Panel 24 PORT fully loaded	NOS	1			
11.13	Supply, installation, testing & commissioning of CABLE MANAGER	NOS	1			
11.14	Supply, installation, testing & commissioning of CAT 6 Data cables for CCTV	METER	500			
11.15	Supply, installation, testing & commissioning of 6 PORT LIU WALL MOUNT LOADED WITH ADAPTER, PIGTAIL	NOS	2			
11.16	Supply, installation, testing & commissioning of LC -LC FIBER PATCH CORD 2MTR	NOS	1			
11.17	Supply, Installation, testing & commissioning of 9 U wall Mount Rack.	NOS	1			
11.18	Supply, installation, testing & commissioning of 25 mm PVC Conduit (bends, tees, flexible conduits, clips, etc) with all other accessories.	METER	300			
12	NETWORK ACTIVE COMPONENTS					
12.1	Supply, installation, testing & commissioning of 12 Port Layer2 Non PoE Switch with 4 SFP Ports	NOS	2			
12.2	Supply, installation, testing & commissioning of FIBER SWITCH 10Gigabit Ethernet, 24 10/100/1000 ports (SFP), 2 combo mini-GBIC ports, 8MB packet buffer.	NOS	1			
12.3	Supply, installation, testing & commissioning of SFP MODULE	PAIR	1			
12.4	Supply, installation, testing & commissioning of Patch Panel 24 PORT fully loaded	NOS	1			
12.5	Supply, installation, testing & commissioning of CABLE MANAGER	NOS	1			
12.6	Supply, installation, testing & commissioning of CAT 6 for Data cables including termination in RJ45 outlets.	METER	200			
12.7	Supply, installation, testing & commissioning of Dual Face plate and back box as per tender specification	NOS	5			
12.8	Supply, installation, testing & commissioning of Cat 6 UTP Patch Cords One Meter as per tender specification.	NOS	5			
12.9	Supply, installation, testing & commissioning of Cat 6 UTP Patch Cords Two Meter as per tender specification.	NOS	RO			
12.1	Supply, installation, testing & commissioning of 24 Port Cat 6 fully loaded Patch Panel as per tender specification	NOS	1			
12.10	Supply, installation, testing & commissioning of 6 PORT LIU WALL MOUNT LOADED WITH ADAPTER, PIGTAIL	NOS	1			
12.11	Supply, installation, testing & commissioning of 300 mm GI Raceways with cover and all other mounting accessories as per the tender specification	METER	50			
12.12	Supply, installation, testing & commissioning of 200 mm GI Raceways with cover and all other mounting accessories as per the tender specification	METER	RO			
12.12	Supply, installation, testing & commissioning of 100 mm GI Raceways with cover and all other mounting accessories as per the tender specification	METER	RO			
	SUMMARY of B					
C	PUBLIC ADDRESS SYSTEM					
13.1	Supply, Installation, testing & commissioning of ceiling mount 6 W Speaker for PA system.	NOS	34			
13.2	Supply, Installation, testing & commissioning of Wall mount 15W weather proof Speaker for PA system.	NOS	5			
13.3	Supply, Installation, testing & commissioning of wall mount 6W Speaker for PA system.	NOS	1			

SL.NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
13.4	Supply, Installation, testing & commissioning of Wiring of Speaker system using 2core of 1.5sqmm PVC insulated copper FRLS Armoured cable.	MTRS	500			
13.5	Supply, Installation, testing & commissioning of System controller with inbuilt 360 watt amplifier and router for 2 zone with FAS and music integration with all accessories.	NOS	1			
13.6	Supply, Installation, testing & commissioning of 2 zone call station with mic.	NOS	1			
13.7	Supply, Installation, testing & commissioning of 6 U wall Mount Rack.	NOS	1			
13.8	Supply, Installation, testing & commissioning of Music player with DVD/USB/FM.	NOS	1			
13.9	Supply, installation, testing & commissioning of 25 mm PVC Conduit(bends, tees, flexible conduits, clips,.etc.) with all other accessories.	METER	200			
14	NURSE CALLING SYSTEM					
14.1	Supply, installation, testing & commissioning of IP MULTI- ROOM CENTRAL - 16 digital inputs/outputs, 1 port Ethernet and 1 port RS-485 - DIN rail mounting and Power supply unit as per tender specification	NOS	2			
14.2	Supply, installation, testing & commissioning of BED UNIT - 2 BUTTONS AND CONNECTION SOCKET (DIN-8)on	NOS	40			
14.3	Nurse call Multiplexer	NOS	1			
14.4	Supply, installation, testing & commissioning of DOOR TOP WARNING LAMP 1 COLOR - RED	NOS	RO			
14.5	Supply, installation, testing & commissioning of Complete Software and licenses	Lot	1			
	SUMMARY of C					
D	MISCELLANEOUS					
16	Supply and Installation of factory fabricated GI NON perforated Cable tray of following sizes as per specifications with all required accessories .					
	(a.)150x60 mm	Mtr	RO			
	(b.)200x60 mm	Mtr	100			
	(c.)300x60 mm	Mtr	200			
	(d.)450x60 mm	Mtr	100			
	SUMMARY of D					

CLIENT:

M/s NS MEMMORIAL INSTITUTE OF MEDICAL SCIENCE
QUILON

ARCHITECT:

M/s ABHILASH ARCHITECTS
QUILON

MEP CONSULTANTS:

**SUMMARY
ELECTRICAL INSTALLATIONS**

SL NO	DESCRIPTION		AMOUNT
A	COMMUNICATION SYSTEM	:	
B	CCTV SYSTEM	:	
C	PUBLIC ADDRESS SYSTEM	:	
D	MISCELLANEOUS	:	
	TOTAL	:	
	<i>GOODS & SERVICE TAX</i>	:	
	GRAND TOTAL		

C. PUBLIC HEALTH ENGINEERING

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
A SANITARY FIXTURES					
1	Fixing at site in position colour or white glazed vitreous (European style) Water Closet with C.P. bolts, nuts, solid white plastic seat and lid, angle cock, CP tube, PVC brass hinges and rubber buffers with all necessary fittings complete including cutting and making good the walls and floors wherever required for the following units with accessories like teflon tape ,shellac, cotton waste and silicone sealant.				
a	Wall mounted EWC with Coupled cistern Cistern.	EACH	49		
b	Wall mounted EWC with Flush valve.	EACH	RO		
2	Fixing at site in position white / colour vitreous china wash basin with C.I./MS brackets painted white, C.P brass waste coupling of standard pattern, 32mm dia C.P , cast brass bottle trap , angle cock , basin mixer/pillar cock , CP tube and union , CP tube connector including cutting & making good the walls wherever required complete,with accessories like teflon tape ,shellac, cotton waste and silicone sealant.				
a	Wash basin above counter type with Pillar Cock.	EACH	15		
b	Flat back wash basin with Pedestal.	EACH	51		
3	Installing, testing & commissioning at site in position white glazed earthen ware flat lipped front urinal of 645x410x425mm or nearest size (Indian make best quality with concealed pressmatic flush valve , flush pipe 25mm dia of required length with a 15mm lead and brass connection with brass union, bottle trap and GI clamps complete cutting and making good walls and floors.	EACH	4		
4	Installing, testing & commissioning at site in position vitreous china urinal partition with expandable anchor fasteners with C.P brass bolts and washers complete, including cutting and making good the walls wherever required.	EACH	4		
5	Fixing at site in positions shower assembly units comprising of wall mixer , shower arm heavy casted with wall flange and shower head, complete including cutting and making good the walls wherever required.with accessories like teflon tape ,shellac, cotton waste and silicone sealant.	EACH	41		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
6	Fixing at site in position towel rail of approved make /quality . C.P brass towel rail with concealed screws.	EACH	41		
7	Fixing at site in position towel ring of approved make /quality . C.P brass towel ring with concealed screws.	EACH	21		
8	Fixing at site in position C.P. ablution spray health faucet with eye hook ,one metre long flexible tube, angle cock with wall flange all complete including cutting and making good the walls wherever required.with accessories like teflon tape ,shellac, waste and silicone sealant.	EACH	49		
9	Fixing at site in position soap tray by means of screws and rawl plug embedded in the walls complete including cutting and making good the walls wherever required.	EACH	41		
10	Fixing at site in position 15mm dia C.P Long Body brass bib cocks with wall flange including cutting and making good the walls wherever required.with accessories like teflon tape ,shellac, cotton waste and silicone sealant.	EACH	2		
11	Fixing stainless steel sink with drain board supported by heavy duty S.S brackets, CP waste coupling , CP angle valve, CP mixer complete including and making good the walls wherever required.with accessories like teflon tape ,shellac, waste and silicone sealant.	EACH	3		
12	Fixing stainless steel sink without drain board supported by heavy duty S.S brackets, CP waste coupling , CP angle valve, CP mixer complete including and making good the walls wherever required.with accessories like teflon tape ,shellac, cotton waste and silicone sealant.	EACH	RO		
13	Fixing sink mixer cock for sink by making good the walls wherever required.with accessories like teflon tape ,shellac, waste and silicone sealant.	EACH	RO		
14	Fixing sink cock for sink by making good the walls wherever required.with accessories like teflon tape ,shellac, waste and silicone sealant.	EACH	3		
15	Fixing at site in position CP concealed stop cock complete.with accessories like teflon tape ,shellac, waste and silicone sealant & with necessary Male Adapter (Brass Threads) fittings in position as per drawings.	EACH	1		
16	Fixing at site in position 15 mm dia angle valve with CP wall flange etc complete (For Geysers, Dish Washer, Washing Machine & Water Purifier)	EACH	5		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
17	Installing, testing & commissioning at site in position Grab Bar up to 600mm complete.	EACH	40		
18	Installing, testing & commissioning at site in position Coat hook complete.	EACH	10		
C/O SUMMARY of A					

B INTERNAL DRAINAGE					
19	<p>Supplying, Installing & Testing at site in position uPVC pipe(SWR) of Type B (IS:13592) including injection moulded fittings with bosses where required eg tees, bends, clamps couplings and adapters & clamping with Universal clamps, Anchor fasteners(8mm), Threaded Rod(8mm), nuts, washers etc complete.and jointing with adhesive approved by manufactures including cutting and making good the walls or surface mounted with clamps as required at site (For Soil & waste pipes -Toilet Inside).</p>				
a	160mm OD	METRE	RO		
b	110mm OD	METRE	200		
c	75 mm OD	METRE	100		
d	50 mm(IS 4985,6kgf/cm ²)	METRE	150		
e	40 mm(IS 4985,6kgf/cm ²)	METRE	RO		
f	32 mm OD(10kg/cm ²)- for sunken drain	METER	60		
h	50 mm OD (10kg/cm ²)- for AC drain	METRE	170		
j	25 mm OD(10kg/cm ²)- for AC drain	METER	50		
20	<p>Supply, installation & testing of Thermal Insulation of condensate drain piping using closed cell elastomeric nitrile rubber / closed cell cross linked polyethylene foam having a density of 50 +/- 10 Kg/m³ and with built-in vapour barrier, etc</p>				
a	50 mm OD (10kg/cm ²)- for AC drain	METRE	RO		
b	25 mm OD(10kg/cm ²)- for AC drain	METER	50		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
21	<p>Supplying, Installing & Testing at site in position uPVC pipe (SWR) of Type B(IS:13592) including SWR fittings with bosses where required eg.tees, bends, clamps, couplings and adapters and cowls with sealing grooves and clamping with Position & jointing with 'O' rings including cutting and making good the walls and floors as required at site (For Vertical & Horizontal Shaft piping).</p> <p>Clamping details - For Vertical Shafts G.I. "U" bolts (8 mm thick) on G.I. slotted rails (1.6 / 2.5 mm thick) , Rail legs (2.5 mm thick) Clamping details - For Suspended lines G.I. "U" bolts (8 mm thick) on Heavy Duty G.I.slotted rails(2.5 mm thick) or Clamping with Universal clamps, Anchor fasteners(10mm), Threaded Rod(10mm), nuts, washers etc complete.</p>				
a	160mm OD	METRE	RO		
b	110mm OD	METRE	180		
c	75 mm OD	METRE	180		
22	Same as specification Item No:21 but for Type A pipes (For rain water pipes)				
b	160mm OD	METER	RO		
c	110mm OD	METER	130		
d	75 mm OD	METER	RO		
e	63 mm OD(4kg/cm2)	METER	170		
23	<p>Supplying, Installing & Testing at site in position uPVC Deep seal Floor trap (ht 7") supporting on G.I. slotted rails (1.6 mm thick), Full threaded rod , Anchor Fasteners etc at site.</p>				
a	110 X 75mm dia out let (Multiple Floor Trap)	EACH	73		
b	110 X 75mm dia outlet (Plain Floor Trap)	EACH	RO		
24	<p>Supplying, Installing, Testing & Commissioning at site in position uPVC multi inlet trap (ht 4") including cutting and making good the walls and floors as required at site.</p>				
a.	75mm dia out let	EACH	RO		
b.	75mm dia outlet (Plain floor trap)	EACH	RO		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
25	Supplying, Installing, Testing & Commissioning at site in position 110mm dia deep seal PVC 'P' trap with boss tee and access cap Including all necessary fittings & supports complete	EACH	4		
26	Supplying, Installing & Testing at site in position low noise 3 layered poly propylene pipes & push fit fittings (PP) of sound level 13 dB @ 4L/sec for non pressurized domestic drainage in accordance with system standards of DIN 4102, the density of the pipe & fittings material should be 1.9 g/cm ³ , clamping with Universal clamps, Anchor fastners (8mm), Threaded Rod (8mm), nuts, washers etc complete including cutting and making good the walls and floors as required at site as per drawings to the satisfaction of the Project Manager (For Hospital Waste Inside) .				
a	160 mm dia	METRE	RO		
b	110 mm dia	METRE	25		
c	75 mm dia	METRE	RO		
d	50 mm dia	METRE	RO		
27	Supplying, Installing & Testing at site in position Polypropylene P Trap (sound level 13 dB @ 4L/sec) of size 110 mm dia of approved make for Drainage, complete with all necessary fittings of approved make, as per drawings to the satisfaction of the Project Manager .	EACH	RO		
28	Supplying, Installing & Testing at site in position Deep seal Polypropylene Floor trap (ht 7") (sound level 13 dB @ 4L/sec) supporting on G.I. slotted rails (1.6 mm thick), Full threaded rod , Anchor Fasteners etc at site.				
a	110 X 75mm dia out let (Multiple Floor Trap)	EACH	RO		
29	Supplying, Installing & Testing at site in position Polypropylene Rodding Eye (sound level 13 dB @ 4L/sec) supporting on G.I. slotted rails (1.6 mm thick), Full threaded rod , Anchor Fasteners etc at site.	EACH	RO		
30	Supplying & Installing at site in position Floor Drain Lock type (SS304) of 1.2 mm thick.				
a	125 x 125mm Square Make:- Eligna/Sanjay Chilly Model no:-	EACH	75		
b	100x 100mm Square Make:- Eligna/Sanjay Chilly Model no:-	EACH	RO		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
31	Supplying & Installing at site in position Anti Cockroach Trap - Lock type(SS304) of 1.2 mm thick.				
a	125 x 125mm Square Make:- Eligna/Sanjay Chilly Model no:-	EACH	RO		
32	Supplying, Installing & Testing at site in position PVC Rodding Eye (6 kg/cm2) complete in all respects.				
a	160 mm dia	EACH	RO		
b	110 mm dia	EACH	25		
c	75 mm dia	EACH	30		
33	Supplying & Installing at site in position 125 X 125 mm square cast SS (304 grade) cleanout with Teflon gasket & SS key for opening, complete in all respects.	EACH	4		
C/O SUMMARY of B					

C WATER SUPPLY					
34	Supplying, Installing & Testing at site in position uPVC unthreaded pipes (As per ASTM D - 1785 , Sch.40) of approved make for water supply, complete with all necessary Sch-40 Fittings (elbows, unions, tees, reducers, couplings, nipples etc.) complete with clamping in position with G.I. "U" bolts (8 mm thick) on G.I. slotted rails (1.6 mm thick) , Rail legs (2.5 mm thick) or with split clamps of approved make as per drawings to the satisfaction of the Project Manager.				
a	15mm	METER	RO		
b	20 mm	METER	350		
c	25 mm	METER	225		
d	32 mm	METER	150		
e	40 mm	METER	125		
f	50 mm	METER	250		
g	65 mm	METER	115		
h	80 mm	METER	30		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
i	100 mm	METER	RO		
j	150 mm	METER	RO		
35	Same as specification Item No:34 for Sch 40 pipes concealing through the walls / floors including cutting and making good the wall to line and level wherever required as per drawings to the satisfaction of the Project Manager.				
a	15 mm dia	METRE	RO		
b	20 mm dia	METRE	300		
c	25 mm dia	METRE	RO		
d	32 mm dia	METRE	RO		
36	Supplying, Installing & Testing at site in position approved make SDR- 11 CPVC Pipes and Fittings (Solvent welded & metal inserted fitting) confirming to ASTM D 2836 with all specials etc. Concealing through the walls / floors including cutting and making good the wall to line and level wherever required as per drawing to the satisfaction of the Project Manager including supply of all materials.				
a	15 mm dia	METRE	150		
b	20 mm dia	METRE	500		
c	25 mm dia	METRE	RO		
37	Supplying, Installing & Testing at site in position CPVC Pipes of approved make for water supply, complete with all necessary Fittings (elbows, unions, tees, reducers, couplings, nipples etc.)confirming to ASTM D 2836 complete with clamping in position with G.I. "U" bolts (8 mm thick) on G.I. slotted rails (1.6 mm thick) , Rail legs (2.5 mm thick) of approved make, as per drawings to the satisfaction of the Project Manager including supply of all materials.				
a	15mm, SDR 11	METER	210		
b	20mm, SDR 11	METER	700		
c	25mm, SDR 11	METER	110		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
d	32mm, SDR 11	METER	110		
e	40mm, SDR 11	METER	75		
f	50mm, SDR 11	METER	50		
g	65mm, SCH -80	METER	RO		
38	Supplying, Installing & Testing at site in position micro cellular closed cell Nitrile rubber elastomeric insulation (UL-94 Approved) tubes/ sheets(9mm thick) for the hot water supply pipes with protective glass fabric & co-extruded polymeric covering for UV & mechanical protection.				
a	15 mm	METER	210		
b	20 mm	METER	700		
c	25 mm	METER	110		
d	32 mm	METER	110		
e	40 mm	METER	75		
f	50 mm	METER	50		
g	65mm	METER	RO		
39	Supplying, Installing & Testing at site in position full way lever operated Forged Brass Ball valve of brass body with forged brass hard chrome plate (PN 25) of approved make with necessary Male Adapter (Brass Threads) fittings in position as per drawings.				
a	15 mm dia	EACH	44		
b	20 mm dia	EACH	171		
c	25 mm dia	EACH	14		
d	32 mm dia	EACH	19		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
e	40 mm dia	EACH	6		
f	50 mm dia	EACH	25		
40	Supplying, Installing & Testing at site in position Butterfly valve (PN 10) wafer type of approved make with necessary PVC flanges, gaskets, nuts and bolts etc complete within position as per drawings.				
a	65 mm dia	EACH	8		
b	80 mm dia	EACH	4		
c	100 mm dia	EACH	RO		
d	150 mm dia	EACH	2		
41	Supplying, Installing & Testing at site in position spring loaded Brass Non Return Valve (PN-16) screw type with necessary fittings complete in all respect.				
a	15 mm dia	EACH	RO		
b	20 mm dia	EACH	RO		
c	25 mm dia	EACH	RO		
d	32 mm dia	EACH	3		
e	40 mm dia	EACH	RO		
f	50 mm dia	EACH	8		
42	Supplying, Installing & Testing at site in position CI Wafer swing type check Valve (PN-16) type with necessary fittings complete in all respect.				
a	65 mm dia	EACH	RO		
b	80 mm dia	EACH	1		
c	100 mm dia	EACH	RO		
d	150 mm dia	EACH	RO		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
43	Supplying, Installing & Testing at site in position spring loaded vertically mounted brass Air Release Valves of approved quality and make on the top of the vertical water supply pipes as per specification and drawings.				
a	20 mm dia	EACH	5		
44	Supply,Installation,Testing and Commisioning of CI Y-type stainer with drain plug , SS screen 304 complete in all respects.				
a	100 mm dia	EACH	RO		
b	80 mm dia	EACH	1		
c	65 mm dia	EACH	1		
d	50 mm dia	EACH	RO		
45	Supplying, Installing & Testing at site in position Brass Float valve (PN 14) of approved make with PP float & nipple with brass threaded insert, brass back nuts, piston and bolts etc complete in all respect to the satisfaction of Project Manager.				
a	40 mm dia	EACH	1		
46	Supplying, Installing, Testing & Commissioning at site in position Multi Jet water meter with unions ,of removable mechanism type ,magnetically coupled ,having dry dial,hermetically sealed totaliser, retrofitable for pulse output and conforming to ISO-4064 Class B complete.				
a	20 mm dia	EACH	RO		
b	25 mm dia	EACH	2		
C/O SUMMARY of C					

D EXTERNAL SEWERAGE & STORM WATER DRAIN					
47	Supplying, Installing & Testing of pipes and conveying to position; and jointing to true lines and gradients, PVC pipe of IS 4985(6kg/cm2), jointing the pipe line as per specification, testing the pipe line after installation to the specified hydrostatic test pressure including Supplying, Supplying, Installing specials like bends, couplers, sockets, connections etc. as per provisions of IS: 1742-1983 (Code of practice for building drainage) complete.				
a	200mm OD	METER	RO		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
b	160mm OD	METER	560		
c	110mm OD	METER	30		
d	75mm OD	METER	20		
48	Same as specification of Item No.47, but for 4kg/cm² :4985) (For rain water pipes)				
a	110mm OD	METER	15		
b	160mm OD	METER	125		
c	200 mm OD	METER	RO		
49	Supplying & Laying of uPVC unthreaded pipes (As per ASTM D - 1785 , Sch.40) of approved make for water supply, complete with all necessary Fittings (elbows, unions, tees, reducers, couplings, nipples etc.) wherever necessary, and conveying to position, cleaning, laying and jointing to true lines and gradients, ,jointing the pipe line as per specification, testing the pipe line after installation to the specified hydrostatic test pressure etc. complete.				
a	20 mm	METER	100		
b	25 mm	METER	50		
c	32 mm	METER	RO		
d	40 mm	METER	RO		
e	50 mm	METER	70		
50	Same as specification of Item No.49, but for PVC 10kg/cm ² (IS :4985) (for external water supply)				
a	110 mm dia	METER	70		
51	Excavation of earth up to a depth of 1.5m in all classes of soil for pipe laying trenches, shoring, dewatering, etc.,wherever necessary including supply of all materials.	m ³	310		
52	Cement concrete1:5:10 (1 cement 5 sand and 10 broken stones) using 20 mm granite broken stones for concreting horizontal pipes in the trenches ,hire and labour charges for form work ,watering for curing etc complete as per the satisfaction of the Project Manager including supply of all materials.	m ³	15		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
53	Supplying, Installing, Testing & Commissioning at site in position brick masonry manholes with 75 class designation bricks in cement mortar 1:5 (1cement :5coarse sand)inside and outside cement plaster 12mm thick with cement mortar 1:3 (1cement : 3 coarse sand) inside with a floating coat of neat cement, 15cm thick R.C.C top slab 1:2:4 mix (1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size) for fixing manhole frame; foundation concrete 1:4:8 mix (1 cement: 4 coarse sand: 8 graded stone aggregate 40mm nominal size) and making channels in cement concrete 1:2:4 mize (1 cement: 2 coarse Sand: 4 graded stone aggregate 20mm nominal size) including excavation, back filling and disposal of surplus earth finished as per standard design etc.				
a	60 X 60 cms (24" X 24") of approx 1.2 m depth, self pigmented type double seal (air & water tight) FRP manhole cover and frame (10 MT) with closed bottom (not thru & thru) lifting key holes & load tested as per IS:1726 & BS EN:124.	EACH	RO		
b	60 X 60 cms (24" X 24") of approx 1.2 m depth, self pigmented type double seal (air & water tight) FRP manhole cover and frame (20 MT) with closed bottom (not thru & thru) lifting key holes & load tested as per IS:1726 & BS EN:124.	EACH	RO		
c	60 X 60 cms (24" X 24") of approx 1.2 m depth, self pigmented type double seal (air & water tight) FRP manhole cover and frame (40 MT) with closed bottom (not thru & thru) lifting key holes & load tested as per IS:1726 & BS EN:124.	EACH	20		
d	90 X 60 cms (36" X 24") of approx 1.5 m depth, self pigmented type double seal (air & water tight) FRP manhole cover and frame (10 MT) with closed bottom (not thru & thru) lifting key holes & load tested as per IS:1726 & BS EN:124.	EACH	RO		
e	90 X 60 cms (36" X 24") of approx 1.5 m depth, self pigmented type double seal (air & water tight) FRP manhole cover and frame (20 MT) with closed bottom (not thru & thru) lifting key holes & load tested as per IS:1726 & BS EN:124.	EACH	RO		
f	90 X 60 cms (36" X 24") of approx 1.5 m depth, self pigmented type double seal (air & water tight) FRP manhole cover and frame (40 MT) with closed bottom (not thru & thru) lifting key holes & load tested as per IS:1726 & BS EN:124.	EACH	20		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
g	99 X 122 cms (40" X 49") of approx 2.5 m depth, self pigmented type double seal (air & water tight) FRP manhole cover and frame (40 MT) with closed bottom (not thru & thru) lifting key holes & load tested as per IS:1726 & BS EN:124.	EACH	10		
h	99 X 122 cms (40" X 49") of approx 2.5 m depth, self pigmented type double seal (air & water tight) FRP manhole cover and frame (20 MT) with closed bottom (not thru & thru) lifting key holes & load tested as per IS:1726 & BS EN:124.	EACH	RO		
i	Pressure braking manholes of size 60 X 60 cms (24" X 24") self pigmented type double seal (air & water tight) FRP manhole cover and frame (40 MT) with closed bottom (not thru & thru) lifting key holes & load tested as per IS:1726 & BS EN:124.	EACH	RO		
54	Supplying, Installing & Testing at site in position best quality PVC gully trap of size 160 X110mm outlet embedded in plain cement concrete 1:4:8 (20mm metal), all the above encased in a chamber of 300 X 300mm built with 115mm thick brick masonry using first class country bricks in CM 1:3 over a bed of CC 1:4:8 using 40mm size metal 100mm thick ,plastering with CM1:3,13mm thick inside, outside, exposed top surfaces and internal and top exposed surface finished smooth with a floating coat of neat cement, providing and fixing FRP manhole cover and frame (10 MT) with closed bottom (not thru & thru) lifting key holes & load tested as per IS:1726 & BS EN:124 of size 300 X 300mm (12" x 12") weighing not less than 10 MT fixing the frame in PCC 1:2:4 using 20mm stone metal including painting the frame and cover with 2 coats of anticorrosive black bitumastic painting etc. complete all as specified and directed.	EACH	10		
55	Same as specification of Item No.54, but with self pigmented type double seal (air & water tight) FRP manhole cover and frame of size 450 X 450 mm weighing not less than 10 MT	EACH	RO		
C/O SUMMARY of D					
E PUMPS & MISCELLANEOUS ITEMS					
56	Installing, Testing & Commissioning at site in position multi stage vertical/ horizontal submersible pump with necessary unions, flanges, foundation bolts etc. with suitable lifting arrangements for maintenance complete.				
a	Above 7.5 HP up to 10 HP	Set	2		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
b	2.5 to 5 HP	Set	2		
c	0.5 to 2.5 HP	Set	RO		
57	Installing, Testing & Commissioning at site in position Twin Booster Pack Pump system/Booster Pump including pressure vessel with necessary unions, flanges, foundation bolts etc. with suitable lifting arrangements for maintainance complete.	Set	1		
58	Supplying, Installing & Testing at site in position Fabricated UPVC Astm Sch 40 Puddle flanges in the underground and overhead water tanks as per the drawings and the requirement of the Project Manager.				
a	200mm OD	EACH	RO		
b	150mm OD	EACH	2		
c	100 mm OD	EACH	2		
d	80mm OD	EACH	8		
e	65 mm OD	EACH	8		
f	50 mm OD	EACH	6		
g	40 mm OD	EACH	RO		
h	32 mm OD	EACH	6		
59	Making holes in RCC beams, slabs floors etc, using core cutting machine , for laying pipes with standard clearance and rendering the same in RCC M 20, including nominal reinforcement wherever required, complete.The quoted rate shall also include water proofing compound(Conbextra GP-2 / GP-10) for complete sealing the same joints around the pipes for full depth etc to the satisfaction of the Project Manager including supply of all materials.				
a	RCC beams 250 mm thick				
i)	50mm dia	EACH	RO		
ii)	75mm dia	EACH	RO		
iii)	110mm dia	EACH	RO		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
b	RCC slabs (For Wash Basin, EWC & Floor Trap) 150 mm thick				
	i) 110mm dia	EACH	100		
	ii) 75mm dia	EACH	RO		
	iii) 63mm dia	EACH	RO		
	vi) 50mm dia	EACH	75		
	v) 32mm dia	EACH	45		
60	Supplying, Installing, Testing & Commissioning at site in position FRP man hole load tested as per IS:1726 for under ground sump and over head tank.				
a	600x600mm -Light Duty for OHT (2.5 MT)	EACH	4		
b	900x600mm -Heavy Duty for UGS (40 MT)	EACH	6		
c	600x600mm -Heavy Duty for UGS (40 MT)	EACH	4		
61	Supplying, Installing, Testing & Commissioning at site in position micro controller based automatic level controller system with inbuilt tuner, starter, level controller, float switch, overload protection, cascading system, two pump control with three phase, auto/manual mode, sensor for under ground sump and over head tank complete in all respects. The quoted rate shall exclude the necessary AC and DC wiring.	EACH	2		
62	Supplying & Installing at site in position Roof Drain Doom model with CI body and aluminium ring.				
a	100 mm dia outlet	EACH	4		
63	Supplying & Installing at site in position Roof Drain Parapet model with CI body and Aluminium Grate.				
a	100 mm dia outlet	EACH	3		
64	Fixing electrically operated horizontal storage heater with M.S. steel glass lined vessel with 1.5-2 Kw heating element, auto-thermostatic switch, neon indicator lamp, pressure relief valve etc. as specified in the specifications, complete in all respects.	EACH	RO		
C/O SUMMARY of E					

CLIENT:

M/s N.S.MEMORIAL INSTITUTE OF MEDICAL SCIENCE
KOLLAM

ARCHITECT:

M/s ABHILASH ARCHITECTS
KOLLAM

MEP CONSULTANTS:



SUMMARY

WATER SUPPLY AND SANITARY INSTALLATIONS

SL. NO	DESCRIPTION		AMOUNT
A	SANITARY FIXTURES	:	
B	SOIL, WASTE AND RAINWATER PIPES	:	
C	WATER SUPPLY PIPES	:	
D	EXTERNAL SEWERAGE	:	
E	PUMPS & MISCELLANEOUS ITEMS	:	
	TOTAL	:	
	<i>GOODS & SERVICE TAX</i>	:	
	GRAND TOTAL	:	

D. FIRE-FIGHTING

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
A	FIRE PUMPS & HYDRANT SYSTEM				
	<u>Vendor has to submit the fire pump curve details, technical data sheet & make considered from the proposed list of makes for approval, along with the commercial offer at the tendering stage itself.</u>				
1	<p>Supply, Installation, Testing and Commissioning of Electrical Driven Main Pump suitable for automatic operations and consisting of the following:-</p> <p>a) End suction type fire pump capable for delivery of 2280 Ltrs/Min, head of 55 M rated 2900 RPM with SS shaft, CI casing, mechanical seal & Bronze impeller.</p> <p>b) Squirrel cage, totally Enclosed Fan Cooled induction Motor suitable for 415 volts \pm 10%, 3 Phase 50 Hz, AC supply, of suitable capacity for the above pump, rated for suitable HP (Approx 40HP) conforming to IP-55 protection & class 'F' insulation.</p> <p>c) Common bedplate of requisite strength fabricated out of MS channel type. d) the pump should ensure a pressure of 3.5 kg/cm² at the farthest sprinkler/hydrant point.</p> <p>d) The rate shall include RCC foundation for pump, base plate common to pump and motors, foundation bolts, antivibration pad, coupling, coupling guards, expansion bellows, proper earthing and connecting cables from fire panel to the motor.</p>	EACH	1		
2	<p>Supply, Installation, Testing and Commissioning of Diesel Engine Driven Fire Pump of approved make suitable for automatic/manual operations consisting of the following, complete as required and as per specifications;</p> <p>a) End suction type fire pump with bronze impeller with CI body should be of grade F.G. 200 to IS : 210 casing shall be designed for 1.5 time of working pressure, capable of delivering of 2280 LPM against a total head of 55 Mtrs while running at suitable RPM to ensure a minimum pressure of 3.5 Kg per Sq.cm at the farthest outlet, complete having tail pieces for proper connection to suction and delivery line.</p> <p>b) Diesel engine suitable for the above pump complete with standard accessories like suitable mechanical seal with mounting arrangement and water cooling system</p> <p>c) Tyre type Coupling and coupling guard for direct coupling of engine & pump. The pump shall be supplied with suitable two sets of Batteries & battery leads with stand, Fuel tank (For 6 Hrs. running and filled fully) with stand, gauge glass, Engine oil & coolant, Fuel piping with valves etc & exhaust pipe of required length to discharge outside building with mineral wool insulation.</p> <p>d) The rate shall include RCC foundation for pump, base plate common to pump and motors, foundation bolts, antivibration pad, coupling, coupling guards, expansion bellows, proper earthing and connecting cables from fire panel to the motor.</p>	EACH	1		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
3	<p>Supply, installation, testing and commissioning of Electric Driven Jockey pump for automatic pressurization of wet riser system in cases of minor leakages consisting of the following:</p> <p>a) End Suction type fire pump Bronze impeller, running at 2950 RPM capable of delivering 180 LPM against a head of 55 Mtrs.</p> <p>b) Squirrel cage TEFC induction motor suitable for 415V, 3 phase, 50Hz AC supply of suitable HP conforming to IP-55 protection & class 'F' insulation for the above pump running at 2900 RPM.</p> <p>c) Common bed plate of requisite strength manufactured out of MS channel type.</p> <p>d) The rate shall include RCC foundation for pump, base plate common to pump and motors, foundation bolts, antivibration pad, coupling, coupling guards, expansion bellows, proper earthing and connecting cables from fire panel to the motor.</p>	EACH	1		
4	<p>Supplying, installing, testing and commissioning of additional length of exhaust pipes M.S. Medium grade Class B with mineral wool insulation with aluminum sheet with long radius bend from residential silencer with necessary clamps, fixtures, civil works and 2 coat painted with heat resistant, rust proof, bituminous paint of approved colors to full height, in stages of following sizes including suitable rain guard for top. Fixing shall be done with proper GI clamps, expansion bolts, support angle of size 40X25X3 mm, also painted, fixed on the wall / inside the duct etc .complete, as instructed by the Engineer.</p> <p>a 150 mm dia M.S. Medium grade with mineral wool insulation with aluminum sheeting.</p> <p>b 200 mm dia M.S. Medium grade with mineral wool insulation with aluminum sheeting.</p>	METER	RO		
5	<p>Supply, Installation, Testing and Commissioning of Gun Metal Hydrant Valve 80mm inlet with single outlet fitted with 63mm instantaneous female coupling on the outlet complete with flange as required blank cap and chain. Conforming to IS:5290 and of ISI mark.</p>	EACH	9		
6	<p>Supply & Installation of Gun Metal branch pipe conforming to IS: 903 of ISI mark with 63 mm dia instantaneous coupling on one end and threading 15mm nozzle.</p>	EACH	8		
7	<p>Supply and Fixing of weather proof MS Hose cabinet of size made of 16 gauge MS Sheet with locking arrangements, suitable to accommodate One/Two length of hose pipe along with one pair of male and female coupling and one branch pipe. The cabinet shall be painted to scarlet red colour. The words "FIRE HOSE" to be painted on the box. The fire hose cabinet shall be approved by architect/Consultant before procuring it.</p> <p>a Single door (600 x 400 x 250mm)</p>	EACH	RO		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
b	Double door (750 x 600 x 250mm) (Quantity taken for external only.)	EACH	3		
8	Supply, installation, testing and commissioning of 63mm dia non percolating flexible and light weight synthetic fire fighting delivery hose with textile reinforcement, resistant to chemicals, acids, alkalis, abrasions, heat and ozone having 36Kg/cm ² burst pressure including gunmetal make and instantaneous type ISI marked coupling approved by fire authority, machine would with copper wire complete in all respects.				
a	Single length (15 m)	EACH	RO		
b	Double length (30 m)	EACH	8		
9	Supply, Installation, Testing and Commissioning of swing type Hose reel drum made of 16 gauge MS sheet to keep 19 mm dia 30 Mtrs long PVC lined heavy duty rubber braided hose pipe with chrome plated nozzle on one end and all other necessary fixing materials including 20/25mm dia necessary ball valve.	EACH	5		
10	Providing and fixing stainless steel Orifice plates at appropriate places to restrict the pressure up to 3.5 Kg/ cm ² at different floors on the hydrant/sprinkler system and yard hydrant. It shall be inserted between the flange and hydrant valve. The size of plate being 100 mm, 80 mm or 65 mm dia (as per the case), the orifice diameter to be not less than 50% of the internal dia of pipe into which it is fitted and the plate thickness shall not be less than 6 mm.				
a	100 mm dia	EACH	RO		
b	80 mm dia	EACH	RO		
c	65 mm dia	EACH	RO		
11	Supply,Installation, Testing and Commissioning CI Butterfly Valves (PN 10) slim seal standard lever operated type confirming to BS: 5155 with SS shaft & disc, flanges, nuts, bolts etc. complete.				
a	200 mm dia	EACH	RO		
b	150 mm dia	EACH	8		
c	100 mm dia	EACH	3		
d	80 mm dia	EACH	5		
e	65 mm dia	EACH	2		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
f	50 mm dia	EACH	6		
12	Supply,Installation, Testing and Commissioning of Wafer Swing type Check Valve (IS:13095) of following sizes having CI body and moving parts, with nuts bolts, gaskets, 3mm thick rubber insertions etc & tested to 1.5 times working pressure.				
a	200 mm dia	EACH	RO		
b	150 mm dia	EACH	1		
c	100 mm dia	EACH	2		
d	80 mm dia	EACH	RO		
e	65 mm dia	EACH	1		
13	Supply, Installation, Testing & Commissioning of double flanged Foot valve with strainer of following sizes conforming to IS: 14846 bolts, nuts, washers, rubber gasket etc complete.				
a	100 mm dia	EACH	1		
b	80 mm dia	EACH	RO		
14	Supply, installation, testing and commissioning of 4 Way Fire Brigade Inlet connection with 4 nos of 63 mm dia. built - in Gun metal Non- return valves instantaneous coupling type arranged on 150 mm dia etc.pipe manifold shall be connected to wet riser main.	EACH	1		
15	Supply, Installation, Testing and Commissioning of brass body Air Release Valve 25 mm dia type of approved make.	EACH	1		
16	Supplying, installing, testing and commissioning of Pressure switches of suitable range for pump sets with, Fittings like unions / colors / reducers etc.	EACH	3		
17	Supplying, installing ,testing and commissioning of Pressure gauges with siphon, Fittings like unions / colors / reducers etc. Glycerine filled pressure gauges to use on pump discharge lines. with 0 to 200PSI. Dial should be 100 mm dia	EACH	5		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
18	Supply, Installation, Testing, and Commissioning of Air Cushion Vessel of 250 mm dia 6 mm thick with automatic air release cock, 25 mm dia drain pipe, drain valve and a shut off and 120 cm in height, complete with approved quality of pressure switches, pressure gauge and all other required accessories to operate commonly main fire pump, sprinkler pump and Jockey pump at drop of pressure, automatically at required pressure setting, outside with one coat of primer and two coats of synthetic enamel paint of approved shade.	EACH	1		
19	Above Ground Piping: Supply, Installation, Testing and Commissioning of G.I pipes "C" class as per IS:1239. Pipes below 50 mm dia shall be of threaded type & above 50 mm dia shall be of Grooved type as per ISO 6182 standards. Supports for the underground pipes with anchor blocks, angular supports for above ground pipes not less than every three meter intervals or as required by the consultant/client. The pipes should withstand test pressure for 8 hours. The above ground pipe are to be applied with two coats of zinchromate primer and two coats of enamel paint of approved colour.				
a	200 mm dia	METER	RO		
b	150 mm dia	METER	85		
c	100 mm dia	METER	20		
d	80 mm dia	METER	20		
e	65 mm dia	METER	5		
20	Under ground piping : Supply, installation Testing and Commissioning of G.I pipes "C" class of following sizes conforming to IS1239 for pipes up to 150 dia & IS:3589 for pipes above 150 dia with fabricated welded joints with necessary fittings/ specials. The rate is inclusive of excavation up to a depth of 1.5 m & wrapping the anticorrosive material for buried pipes with coating of Primer and wrapping with 4 mm thick polymer corrosion resistant tape as per IS : 10221 with 15 mm overlap.				
a	150 mm dia	METER	75		
b	100 mm dia	METER	20		
c	80 mm dia	METER	75		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
21	Supply,erection, testing and commissioning of Automatic Motor Control Panel for the electric driven main pump and standby pump, jockey pump with Star Delta Starters, switch gear and contactors shall be rated for motor HP. The panel shall include necessary indicating lamps for the RYB phases, ammeters and volt meter with selector switch. etc. The panel shall have Auto/Manual Selector Switch. The panel shall be powder red in colour and shall have provision for foot mounting with all accessories as required complete. The cabling between the pump and the panel shall be inclusive.	EACH	1		
22	Supply and Construction of valve chamber with 230 mm Brick masonry wall with best quality TM bricks & CM 1:4,on a PAC 1:4;8 bed of 100 mm thcik.The wall shall be plastered internally smooth in CM 1:3, water proofing as required and externally rough plastered with sponge finish, including curing. The chamber shall be provided with M.S. 6 / 8 mm thick plate fabricated top cover in leaves with necessary hinges and locking arrangement. The size of the chamber shall be 1200mm x 1200mm x1500mm in depth.	EACH	RO		
23	Supply and construction of PCC (1:2:4) pedestals / supports for Under ground / above ground pipes. Quoted rate shall inclusive of excavation (if required), chipping / chasing, shuttering, plastering (if required) etc. complete.	EACH	RO		
24	Supplying, Installing & Testing at site in position M.S. angles / channel of 6mm thick with necessary fixing arrangements, welding, grouting, epoxy primer painting etc., for pipe supports in trenches / inside the building wall faces / ceiling.	KG	100		
C/O SUMMARY of A					

B FIRE SPRINKLER SYSTEM					
25	Above Ground Piping: Supply, Installation, Testing and Commissioning of G.I pipes "C" class as per IS:1239. Pipes below 50 mm dia shall be of threaded type & above 50 mm dia shall be of Grooved type as per ISO 6182 standards. Supports for the underground pipes with anchor blocks, angular supports for above ground pipes not less than every three meter intervals or as required by the consultant/client. The pipes should withstand test pressure for 8 hours. The above ground pipe are to be applied with two coats of zinchromate primer and two coats of enamel paint of approved colour.				
a	150 mm dia	METRE	RO		
b	100 mm dia	METRE	25		
c	80 mm dia	METRE	75		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
d	65 mm dia	METRE	125		
e	50 mm dia	METRE	115		
f	40 mm dia	METRE	50		
g	32 mm dia	METRE	65		
h	25 mm dia	METRE	750		
26	Sprinkler Bulbs : Supply, Installation, Testing and Commissioning of 15mm dia nominal bore quartzoid bulb type sprinklers with temperature rating of 68 / 93 deg C of K-80 factor, conventional type, shall also include suspending arrangement with ceiling, wall arrangement with ceiling, wall beam clamps, fasteners etc.				
a	Pendant type of 68 deg C	EACH	215		
b	Sidewall type of 68 deg C	EACH	30		
c	Upright type of 68 deg C	EACH	55		
d	Pendant type of 93 deg C	EACH	RO		
e	Sidewall type of 93 deg C	EACH	RO		
f	Extended Coverage Pendant type of 68 deg C	EACH	RO		
g	Extended Coverage Sidewall type of 68 deg C	EACH	RO		
27	Supply,installing, testing and commissioning of Flow Switch on sprinkler distribution header on each floor and shall be connected to Fire alarm panel through cable.				
a	100 mm dia	EACH	RO		
b	80 mm dia	EACH	4		
c	65 mm dia	EACH	1		
28	Supplying, installing ,testing and commissioning of Stainless Steel Braided Flexible Pipe (hose) for dropping sprinklers below false ceiling, pipe shall be 12 bar pressure rating and 1000/1500/1800 mm long 25 mm dia with union / reducer collar, clamps etc. as required. It shall have UL Listed & FM approved.				
a	1000 mm	EACH	RO		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
b	1500 mm	EACH	80		
c	1800 mm	EACH	RO		
29	Supply, Installation, Testing and Commissioning of approved type Rosette plates (Dome type, in one-piece) for Sprinklers below false ceiling area. The Rosette shall be chrome plated & shall be as approved by architects / consultants.	EACH	220		
30	Supply, Installation, Testing & Commissioning of Bronze body lever operated stainless steel Ball valve (PN 25) of approved make with necessary weldable fittings in position as per drawings.				
a	25 mm dia	EACH	1		
b	32 mm dia	EACH	RO		
31	Supplying, installing and commissioning C.I.flanged "Y" type Strainer with SS mesh, suitable flanges, nuts, bolts, gaskets etc. complete.				
a	200 mm dia	EACH	RO		
b	150 mm dia	EACH	1		
32	Supplying, installing, testing and commissioning of hydraulically operated Sprinkler control valve , with water motor gong bell and trims as required, pressure gauges, drain valves, ball valves, check valves, strainers etc. complete. Alarm valve shall be UL Listed / FM approved.				
a	250 mm dia	EACH	RO		
a	200 mm dia	EACH	RO		
b	150 mm dia	EACH	RO		
C/O SUMMARY of B					

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
C	FIRE ALARMS ADDRESSABLE SYSTEM				
33	Supply, Installation, Testing & Commissioning of EN54 approved Fire alarm control panel of 2 loop and should be expandable to one more Loop. Panel should be expandable, networkable, having option to interface to BMS with optional interface of LONWorks, BACnet & MODBus, with a battery backup of 24 hrs in normal condition and 30 min in alarm condition. 32 bit Central processor supporting smart degrade mode operation and not limited with 640 characters. Vendor to consider the nos of loop with 80% Loading for Detectors in each loop.	EACH	1		
34	Supply, Installation, Testing and Commissioning of Analogue addressable Repeater fire alarm panel with all necessary accessories and stand -by power back-up. Networked for System Display or Control.	EACH	RO		
35	Supply, Installation, Testing and Commissioning of Intelligent Addressable Multi Sensor with optical smoke element and thermal element. The detector shall have facility to mount in different comprehensive environment like Hostile environment, Parking Garage, HVAC Ducts, Precious storage, Transformer rooms Ware house, Dormitory and normal working environments as required and duly approved by LPCB / EN54.	EACH	145		
36	Supply, Installation, Testing and commissioning of Addressable Electronic addressing Heat Detector Fixed temp or Rate of rise temp setting with Programmable alarm LED of 360 degree viewing angle with operating temp (- 10 degree to + 55 degree) along with standrad base as required and duly approved by LPCB / EN54 .	EACH	1		
37	Supply, Installation, Testing and commissioning of Addressable Loop Powered Hooter cum Strobe with inbuilt Isolator & operating temp (- 10 degree to + 55 degree) complete as required and duly approved by LPCB / EN54.	EACH	5		
38	Supply, Installation, Testing and Commissioning of analog addressable type Manual pull station at indicated locations with necessary termination as per acceptable specifications and full ready for operation.	EACH	5		
39	Supply, Installation, Testing and Commissioning of Addressable control modules for shutting down AHU's, and magnetic fire door holders. Elevator recall, fire damper, pressurization fan, strobes etc.	EACH	RO		
40	Supply, Installation, Testing and Commissioning of Intelligent Addressable monitoring module to connect NO/NC contacts such as pressure switch, flow switches, fire pump contacts (provided by Fire fighting contractor).	EACH	5		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
41	Supply, Installation, Testing and Commissioning of Short Circuit Isolator Module for isolating the affected segment of the circuit, allowing the remaining devices to continue operation.	EACH	RO		
42	Supply, Installation, Testing and Commissioning of Response Indicators complete with all fixing accessories.	EACH	25		
43	Supply, laying, testing and commissioning of 2 Core X 1.5 Sqmm PVC sheathed, flexible, FRLS copper armoured cables of following size for detectors with necessary clamps and spacer saddles etc.	METRE	2500		
44	Supplying and laying of 2run of 1 Sq.mm cross section PVC insulated copper wires.	METRE	RO		
45	Supply, Installation, Testing and Commissioning of 25mm P.V.C Rigid Conduit .	METRE	RO		
C/O SUMMARY of C					

D FIRE EXTINGUISHERS					
46	Supply and fixing of 4Kg ABC Dry Powder (Stored Pressure) Type Fire Extinguisher. pressurized with dry nitrogen gas at 15 bar. Design, construction and testing as per IS 15683 with Fire rating 1A 8B, Body Hydrottested at 35 bar, Operating temperature -30°C to +55°C, external epoxy powder coating with PO Red Shade No. 538 of IS 5, Supplied with standard accessories.	EACH	5		
47	Supply and fixing of 2Kg Clean Agent HCFC 123 , (Stored Pressure) Type Fire Extinguisher, pressurized with Argon gas at 15 bar. Design, construction and testing as per IS 15683 with Fire rating 1A 8B, Body Hydrottested at 35 bar, Operating temperature -30°C to +55°C, external epoxy powder coating with PO Red Shade, Supplied with standard accessories.	EACH	1		
48	Supply, installation, testing and commissioning 5Kg Modular Halotron (Clean Agent) ceiling mounted type Fire Extinguisher. pressurized with Argon gas at 15 bar. Design, construction and testing as per IS 15683 with Fire rating 1A 21B, Body Hydrottested at 35 bar, Operating temperature -30°C to +55°C, external epoxy powder coating with PO Red Shade No. 538 of IS 5, Supplied with standard accessories. (For Floor wise Electrical room)	EACH	5		
49	Supply and fixing of Kitchen type (K Type) fire extinguisher of 6 litre capacity Supplied with standard accessories.	EACH	1		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
50	Supply and fixing of Stored pressure Mechanical foam type fire extinguisher of capacity 9 Ltrs. The pressurised extinguiher shall be fitted with brass valve, plastic syphon tube and discharge hose with nozzle and pressure guage to indicate the inside pressure. The Extinguisher shall have phosphated and epoxy powder coated internally and externally as per IS. The Extinguishers shall be as per IS: 15683-2006 bearing ISI Mark.	EACH	2		
C/O SUMMARY of D					

E	FIRE SIGNAGES				
51	Supplying and installing in position self glowing "FIRE EXIT" sign boards of size (150 X 400 mm) made of luminescent safely, rigid sheet in green colour, photo luminescent ACP sheet in protective glass with two hanging chains & necessary supports to hang it on ceiling. Samples has to approved by the Architect before procuring the same.	EACH	RO		
52	Supplying and installing in position LED "FIRE EXIT" sign boards of size (180 X 300 mm) with battery backup. Samples has to approved by the Architect before procuring the same.	EACH	5		
53	Supplying and installing in position self glowing "FIRE EXTINGUISHER" sign boards of size (150 X 150 mm) made of luminescent safely, rigid sheet in green colour, photo luminescent two foam sheet fixed on the wall. Samples has to approved by the Architect before procuring the same.	EACH	13		
54	Supplying and installing in position self glowing "FIRE LIFT" sign boards of size (150 X 300 mm) made of luminescent safely, rigid sheet in green colour, photo luminescent two foam sheet fixed on the wall. Samples has to approved by the Architect before procuring the same.	EACH	5		
55	Supplying and installing in position self glowing "FIRE ASSEMBLY POINT" sign boards of size (150 X 300 mm) made of luminescent safely, rigid sheet in green colour, photo luminescent two foam sheet fixed on the wall. Samples has to approved by the Architect before procuring the same.	EACH	1		
56	Supplying and installing in position self glowing "MANUAL CALL POINT" sign boards of size (150 X 150 mm) made of luminescent safely, rigid sheet in green colour, photo luminescent fixed on the wall. Samples has to approved by the Architect before procuring the same.	EACH	5		
57	Supplying and installing in position LED "FIRE CABINET" sign boards of size (180 X 300 mm) with battery backup. Samples has to approved by the Architect before procuring the same.	EACH	5		

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
58	Supplying and installing in position self glowing "FIRE EXIT STAIRCASE" sign boards of size (150 X 400 mm) made of luminescent safely, rigid sheet in green colour, photo luminescent ACP sheet in protective glass with two hanging chains & necessary supports to hang it on ceiling. Samples has to approved by the Architect before procuring the same.				
a	Fire Exit Staircase Signages with Down symbol.	EACH	RO		
b	Fire Exit Staircase Signages with Up symbol.	EACH	RO		
c	Fire Exit Staircase Signages with right symbol.	EACH	RO		
d	Fire Exit Staircase Signages with right/ left symbol.	EACH	RO		
59	<u>Supplying and installing of in position the signages " FIRE ORDER" it should contain the following matter on 3mm thick "Opaque" PVC foam board of computerized cut, PVC Non-reflective self adhesive vinyle painted foam board of 3' x 4'. Samples has to approved by the Architect before procuring the same.</u>	<u>EACH</u>	<u>2</u>		
a	A) ALERT THE SECURITY AT SECURITY ROOM BY ACTUATING MANUAL CALL POINT LOCATED AT STRATEGIC LOCATIONS. B) EVACUATE THE OCCUPANTS BY USING FIRE EXITS AND EMERGENCY EXITS ONLY AND ASSEMBLE AT VARIOUS ASSEMBLY POITS. C) IF POSSIBLE TRY TO EXTINGUISH THE FIRE BY USING NEAREST / SUITABLE PORTABLE EXTINGUISHER OR WATER FROM NEAREST WET RISER. D) BE CALM AND DO Not GIVE ANY ROOM FROM PANIC, WALK, DO Not RUN. E) IF YOU ENCOUNTER SERIOUS DIFFICULTY IN EVACUATION, FLAT AND TRY TO ATTRACT ATTENTION OF RESCUE TEAM.				
b	ACTION BY SECURITY/RECEPTION UPON RECEIPT OF INFORMATION THROUGH FIRE ALARM OR FIRE DETECTORS OR BY USING PUBLIC ADDRESS SYSTEM. A) ALERT THE OCCUPANTS BY USING PUBLIC ADDRESS SYSTEM. B) INFORM FIRE CONTROL THROUGH ANY ONE OF THE FOLLOWING PHONE NUMBERS: 101 /(LOCAL NUMBERS) C) REFER EVACUATION PLAN FROM EVACUATING STANDARD PEOPLE. D) GUIDE THE FIRE FORCE, ON THEIR ARRIVAL TO THE SEAT OF FIRE. E) IN CASE OF THE CASUALTIES, CALL AMBULANCE BY DIALING NUMBER (Local numbers) PHONE : ----- FAX : -----				
C/O SUMMARY of E					

SL.NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
F TWO WAY TALK BACK SYSTEM					
60	Supply, Installation, Testing and Commissioning of Micro-processor based talk back announcing console suitable for selecting 8 zones, having keypad for zone selection, LED indication & gooseneck microphone for making announcements including TB switching unit complete in all respect to commission the project.	Nos	1		
61	Supply, Installation, Testing and Commissioning of 6W wall mounted type speakers with talk back facility, in CRCA sheet fabricated housing, complete with switch.	Nos	5		
62	Supply, laying, testing and commissioning of 4 Core X 1.5 Sqmm PVC sheathed, flexible, FRLS copper armoured cables of following size for detectors with necessary clamps and spacer saddles etc.	Mtr	750		
C/O SUMMARY of F					

G STATUATORY APPROVAL					
63	Preparation of drawings/ schemes/ documents and getting final approval/ sanction/ NOC from statutory departments viz. Fire Force Department, Tvm etc. as per rules and regulations (statutory fees if any will be borne by the owner).	LS	1		
C/O SUMMARY of G					

CLIENT:
M/s NS MEMMORIAL INSTITUTE OF MEDICAL SCIENCE
QUILON

ARCHITECT:
M/s ABHILASH ARCHITECTS
QUILON

MEP CONSULTANTS:



**SUMMARY
FIRE FIGHTING INSTALLATIONS**

SL NO	DESCRIPTION		AMOUNT
A	FIRE PUMPS & HYDRANT SYSTEM	:	
B	FIRE SPRINKLER SYSTEM	:	
C	FIRE ALARM (ADDRESSABLE) SYSTEM	:	
D	FIRE EXTINGUISHERS	:	
E	SIGNAGES	:	
F	TWO WAY TALKBACK SYSTEM	:	
G	STATUTORY APPROVAL	:	
	TOTAL	:	
	<i>GOODS & SERVICE TAX</i>	:	
	GRAND TOTAL		

E. AIR CONDITIONING

SL.NO	ITEM DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
I	DX SYSTEM					
	Hi-wall Mounted Units					
1	<p>Supply instllation, tetsing and commissioning of DX type high wall mounted split air conditioning unit (220/240V, 50/60Hz, Single phase) comprises of copper evaporator coils, filters, set temperature display screen, low noise fan etc. Outdoor unit shall be comprised of inverter driven scroll compressor, condenser coil, low noise condenser fan, fan gaurd, motor protection, supproting stands, vibration isolators etc.</p> <p>Refreigerant shall be R410 A or R32</p> <p>Unit shall be supplied with cordless remote controller with LED/LCD display information</p> <p>COP of the unit shall be > 3.5 APPROVED MAKES : Daikin, Mitsubishi-Electric, Toshiba, Bluestar,Carrier.</p> <p>Emblazon of the unit shall be as per architect's/client's advice</p> <p>Unit capacities shall be as follows</p>					
a	1.0 TR, 400 CFM	Nos	35			
b	1.5 TR, 600 CFM	Nos	24			
c	2.0 TR, 800 CFM	Nos	4			
2	<p>Supply installation, testing and commissioning of DX type Ceiling suspended four way air discharge cassette indoor units with compact cooling coil, electronic expansion valve and multispeed fan motor. The blower shall be statically and dynamicaly balanced and designed for silent operation, the filters shall be plasma and synthetic washable media type arranged for convenient cleaning and replacement, filter status indication, built in drain pump, etc. Noise level at higher fan speed shall not exceed 45 dB at 1.5 Mtr distance.</p> <p>Outdoor unit shall be comprised of inverter driven scroll compressor, condenser coil, low noise condenser fan, fan gaurd, motor protection, supproting stands, vibration isolators etc.</p> <p>Refreigerant shall be R410 A or R32</p> <p>Unit shall be supplied with cordless remote controller with LED/LCD display information APPROVED MAKES : Daikin, Mitsubishi-Electric, Toshiba, Bluestar,Carrier.</p>					
a	2.0 TR, 700 CFM	Nos	1			
b	2.5 TR, 850 CFM	Nos	1			
c	3.0 TR, 1000 CFM	Nos	4			
d	3.5 TR, 1200 CFM	Nos	2			
	SUBTOTAL FOR PART-I					

SL.NO	ITEM DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				MATERIAL	LABOUR	
II	PIPING & CABLING					
3	Supply, installation, testing and commissioning of seamless soft drawn Copper piping for DX System of following sizes duly insulated with 13mm thick nitrile rubber insulation(with polyshield coating for outside piping) for gas line and liquid line. including communication cables and accessories. Refrigeration piping to be taken in the piping rack / support individually connecting to all indoor units for the respective floors. Even necessary supports, fittings, valves & where ever required will be included.					
a	1.0 TR Hiwall split	RMT	140			
b	1.5 TR Hiwall split	RMT	96			
c	2.0 TR Hiwall split	RMT	16			
d	2.0 TR Cassette unit	RMT	6			
e	2.5 TR Cassette unit	RMT	6			
f	3.0 TR Cassette unit	RMT	18			
g	3.5 TR Cassette unit	RMT	36			
4	Supply and fixing in position of rigid PVC (10 kg/sq.cm) condensate drain water piping with necessary supports and fittings like, U-traps, elbows, tees and reducers insulated with 9mm nitrile rubber and BOPP tape. (AC contractors scope is upto shaft only. Verttical drain pipe & its termination is in plumbing contractor's scope)					
a	Dia 32 mm	RMT	RO			
b	Dia 25 mm	RMT	444			
	SUBTOTAL FOR PART-II					

CLIENT:

M/s N.S.MEMORIAL INSTITUTE OF MEDICAL SCIENCE
KOLLAM

ARCHITECT:

M/s ABHILASH ARCHITECTS
KOLLAM

MEP CONSULTANTS:



**SUMMARY
AIR-CONDITIONING**

SL NO	DESCRIPTION		AMOUNT
I	DX SYSTEM	:	
II	PIPING, FITTINGS AND VALVES	:	
	TOTAL	:	
	<i>GOODS & SERVICE TAX</i>	:	
	GRAND TOTAL		

F. MEDICAL GAS

SI No	Item Description	Quantity	Unit	Rate	Amount
A	MANIFOLD AND PLANT ROOM				
1	OXYGEN SYSTEM				
1.1	Supply,testing and commissioning of Fully Automatic Oxygen Control Panel with minimum flow rate of 1300 - 2000 LPM ,; Fully complying with ISO 10524-2, ISO 7396-1:2007/HTM02-01 as per technical specifications. The cylinders shall not be included in the quoted price.	1	Set		
1.2	Supply,testing and commissioning of Oxygen Manifold - 2 banks x 10 cylinders, as per technical specifications. The cylinders shall not be included in the quoted price.	1	Set		
1.3	Supply,testing and commissioning of Emergency Oxygen Regulator with manifold- 5 x 5 Cylinders	1	Set		
2	VACUUM PLANT				
2.1	Supply,testing and commissioning of Vacuum plant complete with reciprocating with 1 working and 1 standby installation, vacuum pump should have minimum free air aspirated of 7.5 Hp (Minimum 1500 LPM at 450 mm Hg)	1	Each		
2.2	1000 Ltr Receiver Tank with all accessories	1	No		
B	PIPELINE SYSTEM				
1	Supply,installation testing and commissioning of Copper pipe: Per Mtr. It must comply with EN 13348 as per technical specifications.				
1.1	12mm	250	Mtrs		
1.2	15mm	450	Mtrs		
1.3	22mm	375	Mtrs		
1.4	28mm	200	Mtrs		
1.5	35mm	30	Mtrs		
4	Supply,Installation , testing and commissioning of Gas Outlets meeting requirements of EN ISO 9170-1 .				
4.1	O2 Outlets with Probes	47	Nos		
4.2	Vac Outlets with Probes	47	Nos		
			Nos		
5	Supply,Installation,testing and commissioning of Area Valve Service + Alarm Units, BMS Compatible, fully complying with ISO 7396-1:2007 , as per technical Specifications.				
5.1	2 gas - 1 O2 & 1 Vac	4	Nos		
6	Supply,installation, testing and commissioning of Ball Valves, complying with HTM 02-01, as per technical Specifications.				
6.1	15 mm	50	Nos		
6.2	22mm	48	Nos		
6.3	28mm	3	Nos		
6.4	35mm	1	Nos		
C	Bed Head Unit				
7	BHU Supply and fixing of Double Compartment BHU with Provision for the Gas Outlets (as per the client Requirement) Provision for 4 Nos Electrical Switch and Sockets , 1 Data , 1 Telephone (Colour as per the Client choice). Minimum Length 1.2 Mtr	47	RO		
8	Oxygen Flow Meter With Humidifier Bottle	47	Nos		
9	Vacuum Regulator with 600 ml jar with all accessories.	47	Nos		
	TOTAL VALUE				
	TAXES				
	GRAND TOTAL				