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REPORT ON STRUCTURAL DESIGN

THE PROPOSED CONSTRUCTION OF RESIDENTIAL APARTMENT BUILDINGS IN ANNA NEDUNCHALAI FACIT ROAD, PERUNGUDI, CHENNAI – 600096, COMPRISED IN S.NOS.226/13A2 & 226/13B2 OF PERUNGUDI VILLAGE, SHOLINGANALLUR TALUK, CHENNAI DISTRICT.

"RESIDENTIAL APARTMENT BUILDING"

CLIENT:	M/S KEYSTONE PROMOTERS PVT LTD	**DESIGN:**	STILT+5 Floors	A.R.K ER. A.R. KAVIN SOUNDAR M.E (Struct)., M.Sc (Val)., AIV., AMIE., MISE., CMDA Registered Structural Engineer Grade-1, (SE/GR-1/2022/12/354)., Greater Chennai Corporation, Registered Structural Engineer Grade-1 (RSE 1/21/2026)., Chartered Engineer (AM1878754)., 144, Kavin Complex, Gandhipuram, Karur - 639 002. PH: 99940 87571
STRUCTURE NAME:	RESIDENTIAL	**TITLE:** REPORT ON STRUCTURAL DESIGN		
PLACE:	CHENNAI			

REPORT ON STRUCTURAL DESIGN

Name of Project:	**Name of the Structure:**
The Proposed construction of Residential Apartment Building in anna nedunchalai facit road, perungudi, chennai – 600096, comprised in s.nos.226/13A2 & 226/13B2 of perungudi village, sholinganallur taluk, chennai district.	**RESIDENTIAL APARTMENT BUILDING**
Report by:	**Checked by:** **Approved by:**

DESCRIPTION OF THE PROJECT:

The Proposed construction of Residential Apartment Building in anna nedunchalai facit road, perungudi, chennai – 600096, comprised in s.nos.226/13A2 & 226/13B2 of perungudi village, sholinganallur taluk, chennai district. Purpose of this structure is to house "RESIDENTIAL APARTMENT BUILDING". The structure is designed for Stilt floor + Five upper floors. The location of the proposed structure is in Seismic zone III {As per IS1893: (Part 1)–2016-(annex-E)} in India. The structural design was carried out as per IS456-2000. The dead load and live load are calculated based on IS 875: Part I & II. Seismic loads are considered as per IS 1893:2016. The structure was analyzed using the software STAAD-PRO 2026.

STRUCTURAL DESIGN CALCULATION

I DESIGN PARAMETERS:

(1) This structure is designed for Stilt floor + Five upper floors.
(2) Safe Load Carrying Capacity of 600 Dia Pile : 1020 KN
(3) Concrete grade adopted :
For Pile, Pile Cap
Grade Beam, All Roof Slab & Beams : M25
(4) Grade of steel adopted : Fe 550D
(5) Floor height is 3.05m. (Typical)

II LOAD DETAILS:

DEAD LOAD:

1. Self weight of slab (Assumed as 150mm Tk.) - 3.750 KN/m².
2. Self weight of slab (Assumed as 125mm Tk.) - 3.250 KN/m².

SUPER IMPOSED DEAD LOAD:

1. Floor finish - 1.25 KN/m².
2. Partition loads - 1.0 KN/m².
3. Unit wt. of brick * Tk of wall * Ht of wall

   (20 x 0.23 x (0.8 x (3.05-0.45)) – 9.82 KN/m.

SUPER IMPOSED LIVE LOAD: (As per IS 875 Part II)

1. For Corridors, Staircase - 3 KN/m².
2. For Rooms - 2 KN/m².

SEISMIC PARAMETERS: (As per IS 1893-(Part 1)-2016)

1. Zone considered - Zone III
2. Zone factor - 0.16
3. Soil type - Hard
4. Response reduction factor - 3.0
5. Importance factor - 1.0
6. Damping ratio - 0.05

III LOAD COMBINATION

Loads considered for calculation of horizontal seismic load = DL + 0.25 LL

Load case:

1. Seismic Load in ‘X’ direction (EQX)
2. Seismic load in ‘Z’ direction (EQZ)
3. Dead Load (DL)
4. Live Load (LL)

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Load combination:

1. 1.2(DL+LL+(ELX+0.3ELZ))
2. 1.2(DL+LL+(ELX-0.3ELZ))
3. 1.2(DL+LL-(ELX+0.3ELZ))
4. 1.2(DL+LL-(ELX-0.3ELZ))
5. 1.2(DL+LL+(ELZ+0.3ELX))
6. 1.2(DL+LL+(ELZ-0.3ELX))
7. 1.2(DL+LL-(ELZ+0.3ELX))
8. 1.2(DL+LL-(ELZ-0.3ELX))
9. 1.5(DL+(ELX+0.3ELZ))
10. 1.5(DL+(ELX-0.3ELZ))
11. 1.5(DL-(ELX+0.3ELZ))
12. 1.5(DL-(ELX-0.3ELZ))
13. 1.5(DL+(ELZ+0.3ELX))
14. 1.5(DL+(ELZ-0.3ELX))
15. 1.5(DL-(ELZ+0.3ELX))
16. 1.5(DL-(ELZ-0.3ELX))
17. 0.9DL+1.5(ELX+0.3ELZ)
18. 0.9DL+1.5(ELX-0.3ELZ)
19. 0.9DL-1.5(ELX+0.3ELZ)
20. 0.9DL-1.5(ELX-0.3ELZ)
21. 0.9DL+1.5(ELZ+0.3ELX)
22. 0.9DL+1.5(ELZ-0.3ELX)
23. 0.9DL-1.5(ELZ+0.3ELX)
24. 0.9DL-1.5(ELZ-0.3ELX)
25. 1.5 (DL+LL)
26. 1.2(DL+LL+ELX)
27. 1.2(DL+LL+ELZ)
28. 1.2(DL+LL-ELX)
29. 1.2(DL+LL-ELZ)
30. 1.5(DL+ELX)
31. 1.5(DL+ELZ)
32. 1.5(DL-ELX)
33. 1.5(DL-ELZ)
34. 0.9DL+1.5ELX
35. 0.9DL+1.5ELZ
36. 0.9DL-1.5ELX
37. 0.9DL-1.5ELZ
38. 1(DL+LL)
39. 1(DL+ELX)
40. 1(DL+ELZ)
41. DL+.8(LL+ELX)
42. DL+.8(LL+ELZ)
43. 1DL+ELX+0.3ELZ
44. 1DL+ELX-0.3ELZ
45. 1DL-ELX+0.3ELZ
46. 1DL-ELX-0.3ELZ
47. 1DL+ELZ+0.3ELX
48. 1DL+ELZ-0.3ELX
49. 1DL-ELZ+0.3ELX
50. 1DL-ELZ-0.3ELX
51. 1[DL-ELX]
52. 1[DL-ELZ]

Location and thickness of walls as depicted in the architectural drawings were considered for loads at appropriate locations in the analysis.

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IV ANALYSIS:

The analysis is performed using software STAAD Pro 2026

V DESIGN OF STRUCTURE:

From analysis the columns and beams were grouped as shown in centerline drawing depending on the forces. The Pile & Pile cap, column and beams were designed for the maximum forces in-group as per IS456-2000. Illustrate design calculation for Column, Pile Cap, Beam and Slab enclosed below for reference.

- Annexure (I) – Extract of Design Output (Typical).

VI STRUCTURAL ARRANGEMENT:

Column arrangements, Pile & Pile Cap reinforcement details, Grade Beam, Roof Beam & Slab layout and Reinforcement details were presented as below

- Annexure (II) – As per drawing enclosed here for reference

VII LIST OF STRUCTURAL DRAWINGS:

Following drawings showing the dimension of structural member and reinforcement details are enclosed here with for reference

1. ST-CL-001 - Center line Layout & Column Reinforcement details
2. ST-FL-001 - Pile Cap Layout & Grade Beam
3. ST-RF-001 - Typical Floor Roof slab & Beam Layout

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		600DIA	PILE TABLE	(SEISMIC)				
		ULTIMATE LOAD	WORKING LOAD	TOTAL	Efficiency	NO OF PILES		DIA
NODE								
0	A1	1158	772	1020	1.00	0.76	1.00	600
0	A3	1723	1149	1020	0.94	1.20	2.00	600
0	A5	2102	1401	1020	0.94	1.46	2.00	600
0	A6	1500	1000	1020	1.00	0.98	1.00	600
0	A8	1577	1051	1020	0.94	1.10	2.00	600
0	A9	1583	1055	1020	0.94	1.10	2.00	600
0	A10	1155	770	1020	1.00	0.75	1.00	600
0	A12	1652	1101	1020	0.94	1.15	2.00	600
0	A13	1952	1301	1020	0.94	1.36	2.00	600
0	A14	1433	955	1020	1.00	0.94	1.00	600
0	A16	992	661	1020	1.00	0.65	1.00	600
0	A18	1352	901	1020	1.00	0.88	1.00	600
0	A19	1621	1081	1020	0.94	1.13	2.00	600
0	B1	1159	773	1020	1.00	0.76	1.00	600
0	B3	2566	1711	1020	0.94	1.78	2.00	600
0	B5	1333	889	1020	1.00	0.87	1.00	600
0	B6	1797	1198	1020	0.94	1.25	2.00	600
0	B8	2425	1617	1020	0.94	1.69	2.00	600
0	B9	1314	876	1020	1.00	0.86	1.00	600
0	B10	1377	918	1020	1.00	0.90	1.00	600
0	B12	2387	1591	1020	0.94	1.66	2.00	600
0	B13	1449	966	1020	1.00	0.95	1.00	600
0	B14	1996	1331	1020	0.94	1.39	2.00	600
0	B16	1404	936	1020	1.00	0.92	1.00	600
0	B18	2148	1432	1020	0.94	1.49	2.00	600
0	B19	1469	979	1020	1.00	0.96	1.00	600
0	C4	3467	2311	1020	0.88	2.58	3.00	600
0	C6	1420	947	1020	1.00	0.93	1.00	600
0	C15	2710	1807	1020	0.88	2.01	2.00	600
0	D1	1500	1000	1020	1.00	0.98	1.00	600
0	D2	2648	1765	1020	0.94	1.84	2.00	600
0	D7	2595	1730	1020	0.94	1.80	2.00	600
0	D9	1928	1285	1020	0.94	1.34	2.00	600
0	D10	1585	1057	1020	0.94	1.10	2.00	600
0	D11	2561	1707	1020	0.94	1.78	2.00	600
0	D13	2834	1889	1020	0.94	1.97	2.00	600
0	D17	2469	1646	1020	0.94	1.72	2.00	600
0	D19	1958	1305	1020	0.94	1.36	2.00	600
0	E1	1504	1003	1020	1.00	0.98	1.00	600
0	E2	1565	1043	1020	1.00	1.02	1.00	600
0	E4	2700	1800	1020	0.94	1.88	2.00	600
0	E6	2235	1490	1020	0.94	1.55	2.00	600
0	E7	1978	1319	1020	0.94	1.38	2.00	600
0	E9	2108	1405	1020	0.94	1.47	2.00	600
0	E10	1929	1286	1020	0.94	1.34	2.00	600
0	E11	1631	1087	1020	0.94	1.13	2.00	600
0	E13	3091	2061	1020	0.88	2.30	3.00	600
0	E15	2090	1393	1020	0.94	1.45	2.00	600
0	E17	1941	1294	1020	0.94	1.35	2.00	600
0	E19	1889	1259	1020	0.94	1.31	2.00	600

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Design of Single Pile Cap

	PC1				
Dia of pile	600.0	mm			
	0.60	m			
Ultimate load on column Pu	1565.0	kN		65.6	
Size of Column					
b	300.0	mm			
D	450.0	mm			
Column Pedestal					
Thickness	0.0	mm			
b	**300**	mm			
D	**450**	mm			1000 K*PILE DIA
Fck	**25**	N/Sqmm			1330 (K+1)*PILE DIA
Fy	**550**	N/Sqmm			1630 (K+1)*PILE DIA+300
Punching shear stress	1.250	N/Sqmm			
Assumed Depth,Dpile cap	**762.0**	mm	**PILE CAP DEPTH**		
dpile cap	**704.0**	mm	**(1.5D+100**	**1000**	
Perimeter of Punching Area	4316.0	mm			
Critical section	3288792.0	Sqmm		675	
Act Shear stess (cri)	0.48	N/Sqmm	**Hence safe**	775	
Assumed Size of pile cap					
L	**1219.2**	mm			
B	**1219.2**	mm			
Dist-ColumnCent-Pile cap edge	609.6	mm	978		
Critical Setion from Column Edge	309.6	mm			
Self weightof pile cap	28.3	kN			
Working load on pile cap	1607.5	kN			
Factored pile reaction	1607.5	kN	1.08142		
PRESSURE	1081.4	N/MM^2			
Bending moment	51828220.8	Nmm			
k	0.086				
pt	**0.07**				
Ast(bottom)	1114.84				
Ast(top)(50% of bottom)	557.42				
Min Ast	1114.84				
Bottom Steel					
dia of steel assume	**16**	mm			
No. of Bars Required	5.5				
No. of Bars Provided	**6.0**				
Top Steel					
dia of steel assume	**12**	mm			
No. of Bars Required	4.9				
No. of Bars Provided	**6.0**				

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Check For Shear

Shear Force	783	kN			
Ast(provided)	1206.37	sq.mm			
Pt(Provided)	0.14	%		**INTERPOLATION**	
Tc	0.2319	N/Sqmm		0.00	0
Distance between c/c of pile	**609.6**	m		0.20	0.33
Size of column					-1.65
bc	300.0	mm		0.141	0.2319
Dc	450.0	mm			
Shear Span, av	79.8	mm			
Permissible Shear Stress,Tc'	4.092	N/Sqmm			
Nominal Shear Stress, Tv	0.912	N/Sqmm			
		Safe			

HENCE SUMMARY

Size of Pile Cap

Length, L	**1219**	mm	4 ft
Breadth, B	**1219**	mm	4 ft
Depth of pile Cap,Dpile cap	**762**	mm	

REINFORCEMENTS

Bottom Steel

Dia	**16**	mm
No. of Bars Provided	**6**	Nos

Top Steel

Dia	**12**	mm
No. of Bars Provided	**6**	Nos

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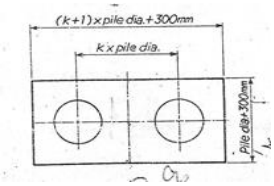
Design of Two Pile Cap

Dia of pile	600.0	mm				
	0.60	m				
Working load on column, Pw	1806.7					
ultimate load on column Pu	2710.0	kN				
Size of Column						
b	300.0	mm				
D	450.0	mm				
Column Pedestal						
Thickness	0.0	mm				
b	**300**	mm				
D	**450**	mm				
fck	**25**	N/Sqmm				
fy	**550**	N/Sqmm				
Punching shear stress	1.250	N/Sqmm				
Assumed Depth,Dpile cap	**914.4**	mm	3			
dpile cap	**854.4**	mm				
Perimeter of Column	4917.6	mm				
Critical section	4201597.4	Sqmm				
Act Shear stess (cri)	0.64	N/Sqmm				
Assumed Size of pile cap		**Hence safe**				
L	**2400.0**	mm				
B	**1000.0**	mm				
Dist-Column Centre-Nearest Pile edge	648.0	mm				
Self weightof pile cap	54.9	kN	C/C DIS	1143		
Working load on pile cap	2792.3	kN				
Factored pile reaction	2792.3	kN	Truss Theory			
Bending moment	301.6	kNm	885.62	kNm		
k	1.21					
pt	**0.2930**					
ast(bottom)	2503.39					
ast(top)(50% of bottom)	1251.70					
Min Ast	1413.16					
Bottom Steel						
dia of steel assume	**20**	mm				
No. of Bars Required	8.0					
No. of Bars Provided	**8.0**					
Top Steel						
dia of steel assume	**16**	mm				
No. of Bars Required	6.2					
No. of Bars Provided	**8.0**					

900	PILE DIA+300
1500	K*PILE DIA
2100	(K+1)*PILE DIA
2400	(K+1)*PILE DIA+300

PILE CAP DEPTH	
(2D+100)	**1300**

INTERPOLATION	
1.20	0.204
1.25	0.216
	-0.24
1.213	**0.2072**



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Check For Shear

			INTERPOLATION	
Shear Force	1355	kN	0.15	0.29
Ast(provided)	2513.27	sq.mm	0.25	0.36
Pt(Provided)	0.29	%		-0.7
Tc	0.39	N/Sqmm	0.29	0.39
Distance between c/c of pile	**1219.0**	mm		
Size of column				
bc	300.0	mm		
Dc	450.0	mm		
Shear Span, av	384.5	mm		
Maximum shear stress Tc	3.100	N/Sqmm		
Nominal Shear Stress, Tv	1.586	N/Sqmm		
		Safe		

SHEAR DESIGN

			INTERPOLATION	
S F	1355.00	KN		
SHEARING STRESS	1.59	N/Sq.mm	0.15	0.29
PT	0.29	%	0.25	0.36
Tc	0.39			-0.7
Tv	1.59	KN	0.294	0.39
Tc b d	333.99			
Vus	1021.01			
legged	2.00			
Dia of stirrups	10.00			
Vus/D	5.97			
Asv	157.00			
Sv	62.87			

PROVIDE STIRRUPS **10 # @ 100mm c/c - 2 - Legged**

SUMMARY

Size of Pile Cap

Length, L	**2400**	mm	7.87 ft
Breadth, B	**1000**	mm	3.28 ft
Depth of pile Cap,Dpile cap	**914**	mm	3.00 ft

REINFORCEMENTS

Bottom Steel

Dia	**20**	mm
No. of Bars Provided	**8**	Nos

Top Steel

Dia	**16**	mm
No. of Bars Provided	**8**	Nos

Shear Reinforcement **10 # @ 100mm c/c - 2 - Legged**

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Design of ThreePile Cap

Diameter of Pile	600.0	mm					
Load Carrying Capacity of Pile	2311.3	kN					
Axial Working Load	3467.0	kN					
Moment	86.2	kNm					
Column Dimension							
Breadth	230	mm					
Depth	980	mm			990.6		
Column Pedestal							
f_{ck}	**25**	N/Sqmm					
f_y	**550**	N/Sqmm					
Pile Cap Dimension							
Spacing of Piles	1143	mm		1200	mm		
Length of Pile Cap	2134	mm		2100	mm		
Width of Pile Cap	1905	mm					
Depth of Pile Cap	**1066.8**	mm	3.5				
Check for Pile Load Capacity							
Total factored axial compressive load	162.6	kN					
P_u	5200.5	kN					
Total factored load	5363.1	kN					
No.of Piles along one side of axis	3						
y coordinate of Pilecap	0.57	m					
Moment about X-axis	86.20	kNm					
Compressive load along X-X axis	1837.98	kN					
Design working load	1225.32	kN	SAFE				
Bending Moment							
M_u	968.3	kNm					
Check for effective depth							
xu max /d for 550	**0.44**						
$d_{required}$	396.8	mm					
$D_{provided}$	1066.8	mm					
Assume Diameter of Rod	20	mm					
Concrete Cover	50	mm					
$d_{provided}$	1006.8	mm	SAFE				
Check for Punching Shear							
Punching Shear	5200.5	kN					
Perimeter of Critical Section	5823.6	mm					
Punching Shear Stress	0.9	N/mm^2				pt interpolation	
Allowable Shear Stress	1.3	N/mm^2	SAFE			X_1	0.35
Main Reinforcement						X_2	0.4
k	0.501					Y_1	0.082
P_t	0.12	%				Y_2	0.094
$A_{st\ Required}$	2269.95	mm^2				X	0.50
Minimum A_{st}	1280.16	mm^2	1280.16			Y	0.118
$Ast_{Provided}$	2269.95	mm^2					
Required Rods	4.07	nos					
Provided Rods	**6**	nos					
Required Spacing	138.40	mm					
Provided Spacing	130	mm					
Check for Oneway Shear						Tc interpolation	
Shear Force	1838.0	kN				X_1	0.15
Shear Stress, τ_v	0.96	N/mm^2				X_2	0.25
$A_{st\ Provided}$	4604	mm^2				Y_1	0.29
$P_{t\ Required}$	0.24	%				Y_2	0.36
$P_{t\ Provided}$	0.24	%				X	0.24
Design Shear, τ_c	0.35	N/mm^2	Additional shear reinforcement required			Y	0.35
			Nominal Shear is OK				
Balance Shear	1161	kN					
V_{us}/d (Actual)	11.53	kN/cm					
Dia of rod	8	mm					
NO. of Legs	2	Nos					
Spacing	150	mm					
V_{us}/d (Provided)	242	kN/m	SAFE				

Summary

Main Reinforcement	**6**	**nos**	**20**	**mm**	**Diameter**
Shear Reinforcement	**150**	**Spacing**	**8**	**mm**	**Diameter**
Bursting Reinforcement	**150**	**Spacing**	**12**	**mm**	**Diameter**

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Sl.No	Slab Number	Lx	Ly	Ly/Lx		Load	F.S	F.L	B.C	COEFFICIENT Sh (+)	Sh(-)	Long (+)	Long (-)	MAX BENDING MOMENT Sh (+)	Sh(-)	Long (+)	Long (-)	THICKNESS D	d	ACTUAL SHORTER K	Pt	Ast	SHORTER K	Pt	Ast	LONGER K	Pt	Ast	MIN Ast	Dia	SHORTER Require	Provide	Dia	LONGER Require	Provide	Ast Req	Ast Pro	Pt t(Provided)	fs -Steel str0ess of service	CHECK FOR CONTROL DEFLECTION Kt	Kc	Kf	Type of structure			
									Support Condition:- Three Edges Discontinuous (One Long Edge Continuous)																																						
1	S1	3.961	5.398	1.36	Two way slab	10.56	1.5	15.838	7	0.059	0.079	0.043	0	14.63206	19.5094	10.6851	0	150	125	0.936	0.225	281.8469	1.249	0.306	382.05	0.684	0.154	192.5	180	10	205.5	200	10	407.8	200	281.85	471.00	0.38	173.54	1.7	1	1	26	44.2	31.69	SAFE
	WALL 9"	7.765	0.115	2.92	1.32				Min value	1.30	0.0570	1.30	0.0760							Min value	0.90	0.216		1.20	0.293		0.65	0.154																			
	SUNK	1.513	3.694	0.25	1.24				Max value	1.40	0.0600	1.40	0.0800							Max value	0.95	0.229		1.25	0.306		0.70	0.167																			
	WALL 9"	0	0.23	3.05	0.00						-0.03		-0.04								-0.26			-0.26		0																			
									Required Value	1.363	0.059	1.363	0.079							Required \	0.936	0.225		1.249	0.306		0.684	0.154																			
									Support Condition:- Three Edges Discontinuous (One Long Edge Continuous)																																						
2	S2	3.508	6.575	1.87	Two way slab	7.50	1.5	11.25	7	0.071	0.094	0.043	0	9.82789	13.0113	5.95306	0	130	105	0.891	0.214	224.6375	1.180	0.288	302.23	0.540	0.118	123.9	156	10	259.7	200	10	503.2	200	224.64	471.00	0.45	138.31	2	1	1	26	52	33.41	SAFE
	WALL 9"	2.931	0.115	3.07	-0.15				Min value	1.75	0.0690	1.75	0.0910							Min value	0.85	0.204		1.15	0.280		0.50	0.118																			
	SUNK	0	2.97	0.25	0.00				Max value	2.00	0.0730	2.00	0.0970							Max value	0.90	0.216		1.20	0.293		0.55	0.130																			
	WALL 9"	0	0.23	3.07	0.00						-0.016		-0.024								-0.24			-0.26		0																			
									Required Value	1.874	0.071	1.874	0.094							Required \	0.891	0.214		1.180	0.288		0.540	0.118																			
									Support Condition:- Three Edges Discontinuous (One Long Edge Continuous)																																						
1	S3	3.846	5.321	1.38	Two way slab	10.45	1.5	15.6801	7	0.060	0.079	0.043	0	13.80147	18.402	9.97325	0	150	125	0.883	0.212	264.9882	1.178	0.287	359.01	0.638	0.142	177.5	180	10	218.7	200	10	436.1	200	264.99	471.00	0.38	163.16	1.8	1	1	26	46.8	30.77	SAFE
	WALL 9"	7.055	0.115	2.92	1.20				Min value	1.30	0.0570	1.30	0.0760							Min value	0.85	0.204		1.15	0.280		0.60	0.142																			
	SUNK	1.509	3.58	0.25	1.25				Max value	1.40	0.0600	1.40	0.0800							Max value	0.90	0.216		1.20	0.293		0.65	0.154																			
	WALL 9"	0	0.23	3.05	0.00						-0.03		-0.04								-0.24			-0.26		0																			
									Required Value	1.384	0.060	1.384	0.079							Required \	0.883	0.212		1.178	0.287		0.638	0.142																			
									Support Condition:- Two Adjacent edges Discontinuous																																						
3	S4	3.508	6.144	1.75	Two way slab	7.59	1.5	11.382	4	0.063	0.084	0.035	0.047	8.829051	11.7713	4.90237	6.58318	130	105	0.801	0.191	200.7741	1.068	0.259	272.21	0.597	0.130	136.5	156	10	288.4	200	10	503.2	200	200.77	471.00	0.45	123.62	2	1	1	26	52	33.41	SAFE
	WALL 9"	5.334	0.115	3.23	0.74				Min value	1.75	0.0630	1.75	0.0840							Min value	0.80	0.191		1.05	0.255		0.55	0.130																			
	SUNK	0	2.97	0.25	0.00				Max value	2.00	0.0690	2.00	0.0910							Max value	0.85	0.204		1.10	0.267		0.60	0.142																			
	WALL 9"	0	0.23	3.07	0.00						-0.024		-0.028								-0.26			-0.24		0																			
									Required Value	1.751	0.063	1.751	0.084							Required \	0.801	0.191		1.068	0.259		0.597	0.130																			
									Support Condition:- Three Edges Discontinuous (One Long Edge Continuous)																																						
1	S6	3.846	5.334	1.39	Two way slab	10.64	1.5	15.9555	7	0.060	0.079	0.043	0	14.06778	18.757	10.1484	0	150	125	0.900	0.216	270.1099	1.200	0.293	366.4	0.649	0.142	177.5	180	10	214.2	200	10	436.1	200	270.11	471.00	0.38	166.31	1.8	1	1	26	46.8	30.77	SAFE
	WALL 9"	7.699	0.115	2.92	1.39				Min value	1.30	0.0570	1.30	0.0760							Min value	0.90	0.216		1.20	0.293		0.60	0.142																			
	SUNK	1.499	3.58	0.25	1.24				Max value	1.40	0.0600	1.40	0.0800							Max value	0.95	0.229		1.25	0.306		0.65	0.154																			
	WALL 9"	0	0.23	3.05	0.00						-0.03		-0.04								-0.26			-0.26		0																			
									Required Value	1.387	0.060	1.387	0.079							Required \	0.900	0.216		1.200	0.293		0.649	0.142																			
									Support Condition:- Three Edges Discontinuous (One Short Edge Continuous)																																						
4	S8	3.467	3.959	1.14	Two way slab	7.66	1.5	11.4855	8	0.054	0.000	0.043	0.057	7.503764	0	5.93644	7.86923	130	106	0.668	0.159	168.1546	0.668	0.159	168.15	0.700	0.167	177.02	156	8	298.8	200	8	283.8	200	168.15	301.44	0.28	161.77	2	1	1	26	52	32.71	SAFE
	WALL 9"	5.334	0.115	3.23	1.74				Min value	1.10	0.0510	1.10	0.0000							Min value	0.65	0.154		0.65	0.154		0.70	0.167																			
	SUNK	0	2.97	0.25	0.00				Max value	1.20	0.0590	1.20	0.0000							Max value	0.70	0.167		0.70	0.167		0.75	0.179																			
	WALL 9"	0	0.23	3.07	0.00						-0.08										-0.26			-0.26		0																			
									Required Value	1.142	0.054	1.142	0.000							Required \	0.668	0.159		0.668	0.159		0.700	0.167																			
									Support Condition:- Two Adjacent edges Discontinuous																																						
5	S10	3.622	5.251	1.45	Two way slab	7.50	1.5	11.25	4	0.054	0.073	0.000	0.047	8.042416	10.7724	0	6.93661	130	106	0.716	0.171	181.0324	0.959	0.231	245.15	0.617	0.142	150.52	156	8	204.9	200	8	322.1	200	181.03	301.44	0.28	174.16	2	1	1	26	52	34.17	SAFE
	WALL 9"	5.334	0.115	3.23	0.98				Min value	1.40	0.0530	1.40	0.0710							Min value	0.70	0.167		0.95	0.229		0.60	0.142																			
	SUNK	0	2.97	0.25	0.00				Max value	1.50	0.0560	1.50	0.0750							Max value	0.75	0.179		1.00	0.242		0.65	0.154																			
	WALL 9"	0	0.23	3.07	0.00						-0.03		-0.04								-0.24			-0.26		0																			
									Required Value	1.450	0.054	1.450	0.073							Required \	0.716	0.171		0.959	0.231		0.617	0.142																			
									Support Condition:- One Short Edge Discontinuous																																						
6	S11	3.773	5.398	1.43	Two way slab	7.50	1.5	11.25	2	0.042	0.056	0.028	0.037	6.713596	8.90654	4.48419	5.92554	130	106	0.598	0.141	149.8859	0.793	0.189	200.6	0.527	0.118	125.08	156	8	250.5	200	8	322.1	200	149.89	301.44	0.28	144.20	2	1	1	26	52	35.59	SAFE
	WALL 9"	5.334	0.115	3.23	0.85				Min value	1.40	0.0410	1.40	0.0550							Min value	0.55	0.130		0.75	0.179		0.50	0.118																			
	SUNK	0	2.97	0.25	0.00				Max value	1.50	0.0440	1.50	0.0570							Max value	0.60	0.142		0.80	0.191		0.55	0.130																			
	WALL 9"	0	0.23	3.07	0.00						-0.03		-0.02								-0.24			-0.24		0																			
									Required Value	1.431	0.042	1.431	0.056							Required \	0.598	0.141		0.793	0.189		0.527	0.118																			
									Support Condition:- Interior Panels																																						
7	S12	4.225	6.575	1.56	Two way slab	8.57	1.5	12.8535	1	0.042	0.055	0.024	0.032	9.613526	12.5216	5.50663	7.34218	130	105	0.872	0.209	219.7377	1.136	0.276	290.11	0.666	0.154	161.7	156	10	270.6	200	10	485.5	200	219.74	471.00	0.45	135.30	2	1	1	26	52	40.24	SAFE
	WALL 9"	5.334	0.115	3.23	0.35				Min value	1.50	0.0410	1.50	0.0530							Min value	0.85	0.204		1.10	0.267		0.65	0.154																			
	SUNK	0	2.97	0.25	0.00				Max value	1.75	0.0450	1.75	0.0600							Max value	0.90	0.216		1.15	0.280		0.70	0.167																			
	WALL 9"	0	0.23	3.07	0.00						-0.016		-0.028								-0.24			-0.26		0																			
									Required Value	1.556	0.042	1.556	0.055							Required \	0.872	0.209		1.136	0.276		0.666	0.154																			
									Support Condition:- Interior Panels																																						
8	S14	3.887	5.319	1.37	Two way slab	7.71	1.5	11.571	1	0.038	0.050	0.024	0.032	6.652426	8.69508	4.19577	5.59435	130	106	0.592	0.140	148.501	0.774	0.185	195.81	0.498	0.106	112.36	156	8	256.6	200	8	322.1	200	148.50	301.44	0.28	142.87	2	1	1	26	52	36.67	SAFE
	WALL 9"	5.334	0.115	3.23	0.82				Min value	1.30	0.0360	1.30	0.0470							Min value	0.55	0.130		0.75	0.179		0.45	0.106																			
	SUNK	0	2.97	0.25	0.00				Max value	1.40	0.0390	1.40	0.0510							Max value	0.60	0.142		0.80	0.191		0.50	0.118																			
	WALL 9"	0	0.23	3.07	0.00						-0.03		-0.04								-0.24			-0.24		0																			
									Required Value	1.368	0.038	1.368	0.050							Required \	0.592	0.140		0.774	0.185		0.498	0.106																			
									Support Condition:- Two Short Edges Discontinuous																																						
9	S17S	2.819	3.496	1.24	Two way slab	14.46	1.5	21.6825	5	0.041	0.054	0.035	0.050	7.099799	9.23666	6.0307	0	130	106	0.632	0.150	158.6302	0.822	0.197	208.54	0.537	0.118	125.08	156	8	240.9	200	8	322.1	200	158.63	301.44	0.28	152.61	2	1	1	26	52	26.59	SAFE
	WALL 9"	5.334	0.115	3.23	2.81				Min value	1.20	0.0400	1.20	0.0520							Min value	0.60	0.142		0.80	0.191		0.50	0.118																			
	SUNK	0	2.97	0.25	0.00				Max value	1.30	0.0430	1.30	0.0560							Max value	0.65	0.154		0.85	0.204		0.55	0.130																			
	WALL 9"	0	0.23	3.07	0.00						-0.03		-0.04								-0.24			-0.26		0																			
									Required Value	1.240	0.041	1.240	0.054							Required \	0.632	0.150		0.822	0.197		0.537	0.118																			
									Support Condition:- Interior Panels																																						
10	S22	3.774	6.68	1.77	Two way slab	7.52	1.5	11.2785	1	0.045	0.060	0.024	0.032	7.280243	9.70271	3.85537	5.1405	130	106	0.648	0.154	162.7157	0.864	0.207	219.68	0.458	0.106	112.36	156	8	228.7	200	8	322.1	200	162.72	301.44	0.28	156.54	2	1	1	26	52	35.60	SAFE
	WALL 9"	5.334	0.115	3.23	0.49				Min value	1.75	0.0450	1.75	0.0600							Min value	0.60	0.142		0.85	0.204		0.45	0.106																			
	SUNK	0	2.97	0.25	0.00				Max value	2.00	0.0490	2.00	0.0650							Max value	0.65	0.154		0.90	0.216		0.50	0.118																			
	WALL 9"	0	0.23	3.07	0.00						-0.016		-0.02								-0.24			-0.24		0																			
									Required Value	1.770	0.045	1.770	0.060							Required \	0.648	0.154		0.864	0.207		0.458	0.106																			
									Support Condition:- Four Edges Discontinuous																																						
11	S25S	2.66	3.274	1.23	Two way slab	10.97	1.5	16.458	9	0.074	0.000	0.056	0	8.635704	0	6.52121	0	130	106	0.769	0.183	194.4654	0.769	0.183	194.47	0.580	0.130	137.8	156	8	258.3	200	8	322.1	200	194.47	301.44	0.28	187.09	1.8	1	1	20	36	25.09	SAFE
	WALL 9"	5.334	0.115	3.23	3.32				Min value	1.20	0.0720	1.20	0.0000							Min value	0.75	0.179		0.75	0.179		0.55	0.130																			
	SUNK	0	2.97	0.25	0.00				Max value	1.30	0.0790	1.30	0.0000							Max value	0.80	0.191		0.80	0.191		0.60	0.142																			
	WALL 9"	0	0.23	3.07	0.00						-0.07		0								-0.24			-0.24		0																			
									Required Value	1.231	0.074	1.231	0.000							Required \	0.769	0.183		0.769	0.183		0.580	0.130																			
									Support Condition:- Four Edges Discontinuous																																						
12	S35S	2.655	3.264	1.23	Two way slab	11.12	1.5	16.68	9	0.074	0.000	0.056	0	8.707395	0	6.58435	0	130	106	0.775	0.185	196.0886	0.775	0.185	196.09	0.586	0.130	137.8	156	8	256.2	200	8	322.1	200	196.09	301.44	0.28	188.65	1.8	1	1	20	36	25.05	SAFE
	WALL 9"	5.334	0.115	3.23	3.34				Min value	1.20	0.0720	1.20	0.0000							Min value	0.75	0.179		0.75	0.179		0.55	0.130																			
	SUNK	0	2.97	0.25	0.00				Max value	1.30	0.0790	1.30	0.0000							Max value	0.80	0.191		0.80	0.191		0.60	0.142																			
	WALL 9"	0	0.23	3.07	0.00						-0.07		0								-0.24			-0.24		0																			
									Required Value	1.229	0.074	1.229	0.000							Required \	0.775	0.185		0.775	0.185		0.586	0.130																			

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X- AXIS BEAM

1	Beam no	B3'B5'	BEAM 3A	SS			span	6.58	
		Derived from Trapezoidal formula							
		3.51	6.58	7.50	KN/M^2			11.91	kN/M
		4.23	6.58	8.57	KN/M^2			15.61	kN/M
	Slab load	Derived from TRI formula							
		0.00		7.50	KN/M^2			0.00	kN/M
		0.00		12.25	KN/M^2			0.00	kN/M
	Rectangular	0.00		7.50	KN/M^2			0.00	kN/M
	CANTILEVER	0.00		7.50	KN/M^2			0.00	kN/M
	STAIRCASE	0.00		0.00	KN/M^2			0.00	kN/M
	beam load	0.3	0.4			25		3.00	kN/M
	Wall load	0.115	2.60			19		5.68	kN/M
				Total load on beam				36.19	kN/M
				FACTORED LOAD			1.5	54.29	
	P.T.LOAD							178.48	
2	Beam no	B8'B9'	BEAM 3B	SS				6.14	
	span	Derived from Trapezoidal formula							
		3.51	6.14	7.59	KN/M^2			11.86	kN/M
		4.23	4.73	7.50	KN/M^2			11.64	kN/M
	Slab load	Derived from TRI formula							
		0.00		9.75	KN/M^2			0.00	kN/M
		0.00		7.66	KN/M^2			0.00	kN/M
	Rectangular	0.00		7.50	KN/M^2			0.00	kN/M
	STAIRCASE	0.00		11.79	KN/M^2			0.00	kN/M
	STAIRCASE	0.00		15.87	KN/M^2			0.00	kN/M
	beam load	0.3	0.4			25		3.00	kN/M
	Wall load	0.115	2.60			19		5.68	kN/M
				Total load on beam				32.18	kN/M
				FACTORED LOAD			1.5	48.26	
	P.T.LOAD							148.27	
3	Beam no	B12'B13'	BEAM 3C	SS				6.14	
	span	Derived from Trapezoidal formula							
		3.51	6.14	7.50	KN/M^2			11.72	kN/M
		4.23	6.14	8.57	KN/M^2			15.25	kN/M
	Slab load	Derived from TRI formula							
		0.00		9.75	KN/M^2			0.00	kN/M
		0.00		7.50	KN/M^2			0.00	kN/M
	Rectangular	0.00		12.25	KN/M^2			0.00	kN/M
	CANTILEVER	0.00		8.50	KN/M^2			0.00	kN/M
	STAIRCASE	0.00		14.12	KN/M^2			0.00	kN/M
	beam load	0.3	0.4			25		3.00	kN/M
	Wall load	0.115	2.60			19		5.68	kN/M
				Total load on beam				35.65	kN/M
				FACTORED LOAD			1.5	53.47	
	P.T.LOAD							164.18	
4	Beam no	B18'B19'	BEAM 4	SS				5.25	
	span	Derived from Trapezoidal formula							
		3.62	5.25	7.50	KN/M^2			11.43	kN/M
		4.11	5.25	7.50	KN/M^2			12.27	kN/M
	Slab load	Derived from TRI formula							
		0.00		7.50	KN/M^2			0.00	kN/M
		0.00		7.50	KN/M^2			0.00	kN/M
	Rectangular	0.00		12.25	KN/M^2			0.00	kN/M
	CANTILEVER	0.00		8.50	KN/M^2			0.00	kN/M
	STAIRCASE	0.00		14.12	KN/M^2			0.00	kN/M
	beam load	0.3	0.32			25		2.40	kN/M
	Wall load	0.115	2.60			19		5.68	kN/M
				Total load on beam				31.77	kN/M
				FACTORED LOAD			1.5	47.66	
	P.T.LOAD							125.12	

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1	Beam no	C13C15	BEAM 8B						
	Factored UDL Load on beam	9.87	kN/m						
	Span Condition	END	(Mid or End)						
	Span	2.64	m						
	Point Load Condition	MID	(Mid or Cant)						
	Factored point Load on beam	89.68	kN						
	a or l(Cant. Span)	0.58	M	NEAR FIXED SUPPORT					
	b	2.06	M						

SR	DR
0.00	0.00
0.00	0.00

Bending Moment ,Shear force Coefficents

IS 456-2000 Table 12- p 36

	Span Moment-Mid		Support Moment	
	End Span	Interior span	End Support	Interior Support
Bending moment	0.10	0.10	0.10	0.10
Bending Moment	6.88	6.88	6.88	6.88

IS 456-2000 Table 13- p 36

	End Support		Interior Support	
	End Support		Next to end support	Interior supports
	0.40		0.625	0.50
			(5/8)WL	
Shear force	10.42		16.29	13.03
Bending Moment				

	Mid span	Support
Design moment -UDL	4.83	8.60
Design Shear force		16.29
Bending moment(Pt Load)	12.47	36.20
Shear force -Pt Load		83.61

	B.M		S.F	
	SUPPORT	MID	RA	RB
	$Wab(L+b)/2L^2$	$Wa^2b(2L+b)/2L^3$	$Wb(3L^2-b^2)/2L^3$	$Wa^2(2L+b)/2L^3$
kNm	36.20	12.47	83.61	6.06
kN				

	MID-SPAN		STAAD MID	STAAD SUPPORT	SUPPORT	
Total B.M	17.3		BM 0	0.00	44.8	
Total.shear force	99.9	kN	SF	46	99.90	kN
Size of Beam						
b	230	MM			230	MM
d req	150				238	
d req	131.95				131.95	
D req	183.4				270.6	
Dpro	530	MM			530	MM
d	497	MM			497	MM
d'/d	0.07				0.07	
Materials Used						
Grade of concrete	M20	25			M20	25
Grade of steel	Fe500	500			Fe500	500
K=Mu/bd^2	0.30	Singly reinforced beam			0.79	Singly reinforced beam
	Pt	Pc			Pt	Pc
Percentage of steel	0.071	0.000			0.188	0.0000
Ast	81.3	0			215.2	0
Minimum Ast	207.2				207.2	

INTERPOLATION (0.100, 4)

Mid -Span

	Pt		Pc	
Min value	0.30	0.0700	0.30	0
Max value	0.35	0.0820	0.35	0
		-0.24		0.00
Required Value	0.30	**0.0711**	0.305	**0.0000**

Support

	Pt		Pc	
Min value	0.75	0.1790	0.75	0
Max value	0.80	0.1910	0.80	0
		-0.24		0
Required Value	0.788	**0.1882**	0.788	**0.0000**

	Bottom		Top		top		bottom	
	Dia(mm)	Nos	Dia(mm)	Nos	Dia(mm)	Nos	Dia(mm)	Nos
Reinforcement provided	16	3	16	2	16	3	16	2
Reinforcement required		**1.03**		**0.75**		**1.07**		**0.75**

Ast(BOTTOM)	=	602.88	Sqmm		602.88	Sqmm
Ast(TOP)	=	150.72	Sqmm		150.72	Sqmm
Ast (provide)	=	602.88	Sqmm		602.88	Sqmm
Pt (provide)	=	0.527			0.527	
Asc (provide)	=	401.92	Sqmm		401.92	Sqmm
Pc (provide)	=	0.352			0.352	

INTERPOLATION

Min value	0.50	0.49
Max value	0.60	0.53
		-0.4
Required Value	0.527	0.5010

SHEAR DESIGN

S F	=	**99.90**	kN	
SHEARING STRESS	=	0.87	N/Sq.mm	
PT	=	**0.53**	%	
Tc	=	0.501	N/Sq.mm	
Tv	=	0.87	N/Sq.mm	
Tc b d	=	57.27	kN	
No of Legs	=	2.00		
Asv	=	157.000	Sq.mm	
Vus	=	42634.97	N	
Dia Assumed		**10**	**mm**	
Spacing Required		**796.12**	mm	
Maximum spacing	.75d	= 372.75	mm	
Spacing Provided		**200**	**mm**	

Deflection check

Ast Require	=	215.2	Sqmm
Ast Provide	=	602.88	Sqmm
fs	=	103.49	
pt-Provide	=	0.527	
pc-Provide	=	0.352	
(l/d)basic	=	20	
kt	=	0.8	
kc	=	1	
kf	=	1	
(l/d)max	=	16	
(l/d)actual	=	5.31	
		Deflection safe	

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Design Based on As per IS456-2000

1	Beam no	B3'B5'	BEAM 3A		
	Factored UDL Load on beam	54.29	kN/m		
	Span Condition	END	(Mid or End)		
	Span	6.58	m		
	Point Load Condition	MID	(Mid or Cant)		
	Factored point Load on beam	0.00	kN	0.00	
	a or l(Cant. Span)	1.75	M	0.00	
	b	4.82	M	0.00	
	Wab/l	0.00		0	

SR	DR
0.00	0.00
0.00	0.00

Bending Moment ,Shear force Coefficents

IS 456-2000 Table 12- p 36

	Span Moment-Mid		Support Moment	
	End Span	Interior span	End Support	Interior Support
Bending moment	0.08	0.0625	0.1	0.08
Bending Moment	195.59	146.69	234.70	195.59

IS 456-2000 Table 13- p 36

	End Support	Interior Support	
	End Support	Next to end support	Interior supports
	0.40	0.6	0.50
Shear force	142.78	214.18	178.48

Bending Moment

	Mid span	Support
Design moment -UDL	293.38	146.69
Design Shear force		214.18

Bending moment(Pt Load)	0.00	0.00	kNm
Shear force -Pt Load	0.00	0	kN

	MID-SPAN			SUPPORT		
Total B.M	293.4		STADD	146.7		
Total.shear force	214.18	kN	19.416	214.18	kN	
Size of Beam			0			
b	300	MM		300	MM	
d req	542			383		
d req	328.75			328.75		
D req	577.3			418.5		
Dpro	530	MM		530	MM	
d	495	MM		495	MM	
d'/d	0.07			0.07		
Materials Used						
Grade of concrete	M20	25		M20	25	
Grade of steel	Fe500	500		Fe500	500	
K=Mu/bd^2	3.99	Doubly reinforced beam		2.00	Singly reinforced beam	
	Pt	Pc		Pt	Pc	
Percentage of steel	1.105	0.170		0.512	0.000	
Ast	1640.7	251.996162		759.8	0	
Minimum Ast	270.3			270.3		

	Bottom		Top		top		bottom	
	Dia(mm)	Nos	Dia(mm)	Nos	Dia(mm)	Nos	Dia(mm)	Nos
Reinforcement provided	**20**	**6**	**20**	**2**	**20**	**4**	**20**	**2**
Reinforcement required		**5.23**		**1.50**		**2.42**		**1.00**

Ast(BOTTOM)	=	1884	Sqmm		1256	Sqmm	
Ast(TOP)	=	471	Sqmm		314	Sqmm	
Ast (provide)	=	1884	Sqmm		1256	Sqmm	
Pt (provide)	=	1.269			0.846		
Asc (provide)	=	628	Sqmm		628	Sqmm	
Pc (provide)	=	0.423			0.423		

SHEAR DESIGN

S F	=	**214.18**	kN
SHEARING STRESS	=	1.44	N/Sq.mm
PT	=	**1.27**	%
Tc	=	0.704	N/Sq.mm
Tv	=	1.44	N/Sq.mm
Tc b d	=	104.51	kN
No of Legs	=	2.00	
Asv	=	100.480	Sq.mm
Vus	=	109672.21	N
Dia Assumed		**8**	**mm**
Spacing Required		**197.28**	mm
Maximum spacing	.75d =	371.25	mm
Spacing Provided		**200**	**mm**

INTERPOLATION		Tc
Min value	1.20	0.69
Max value	1.30	0.71
		-0.2
Required Value	1.269	0.7037

Deflection check

Ast Require	=	1640.7 Sqmm
Ast Provide	=	1884 Sqmm
fs	=	252.55
pt-Provide	=	1.269
pc-Provide	=	0.423
(l/d)basic	=	20
kt	=	0.8
kc	=	1
kf	=	1
(l/d)max	=	16
(l/d)actual	=	13.28

Deflection safe

INTERPOLATION		0.100	4
		Mid -Span	
	Pt		**Pc**
Min value	3.90	1.0830	3.90	0.1460
Max value	4.00	1.1070	4.00	0.1720
		-0.24		-0.26
Required Value	3.99	**1.1049**	3.991	**0.1697**
		Support	
	Pt		**Pc**
Min value	1.95	0.4980	1.95	0
Max value	2.00	0.5130	2.00	0
		-0.3		0
Required Value	1.996	**0.5117**	1.996	**0.0000**

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THE LANDLENS SUITE

Eight ways to know a piece of land before you pay for it.

This report covers one part of the picture. These cover the rest, drawn from the same government records, for any property in Tamil Nadu.

LandLens One
Ask anything about a property and get an answer grounded in live government records, with the sources shown.
/landlens/one

Verify My Land
Every record check run on one property and returned as a single report.
/landlens/verify-my-land

Legal Opinion
An advocate's written opinion on the title, built on the records we pull for it.
/landlens

One Map
Every layer on one map: the parcel, its boundary, zoning, water bodies and what sits around it.
/landlens/one/map

PriceMap
What land actually changed hands for around this plot, taken from the registered deeds.
/landlens/pricemap

Build Scope
What you are allowed to build here: floor space, height, coverage and setbacks.
/landlens/build-scope

Property Tracker
Watch a property and hear about it when something new is registered against it.
/landlens/property-tracker

Deal Room
Run the transaction in one place: documents, stamping, signatures and the parties.
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Twenty-four checks you can run yourself, at no cost.

Records and verification

The registers themselves, read for you.

- Encumbrance Certificate
- Patta and Chitta
- Field Measurement Sketch
- EC Analyzer
- Bank charge check
- Court case search
- Seller background check
- Approval check by survey

Value and duty

What it is worth and what it costs to register.

- Guideline value by street
- Guideline value by survey
- Stamp duty and registration fees
- Capital gains
- Floor space index
- Area unit converter

Zoning and land use

What the plan says can happen on this land.

- Land use zone finder
- CMDA land use check
- Coastal regulation zone
- Master plan check
- Water bodies finder
- Airport height clearance

Registers and directories

Who holds it, and which office keeps the record.

- Find your registering office
- Temple property check
- Waqf property check
- RERA register

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- Legal opinions, due diligence and title verification
- Building plan, layout and sub-division approvals
- Completion and occupancy certificates, regularisation
- Escrow, negotiation and NRI property management
- Land survey, soil testing, architecture and construction

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Prepared from the registers named on the page each finding sits on. Where a register could not be read, this document says so in its place rather than leaving the gap to be read as a clean result.