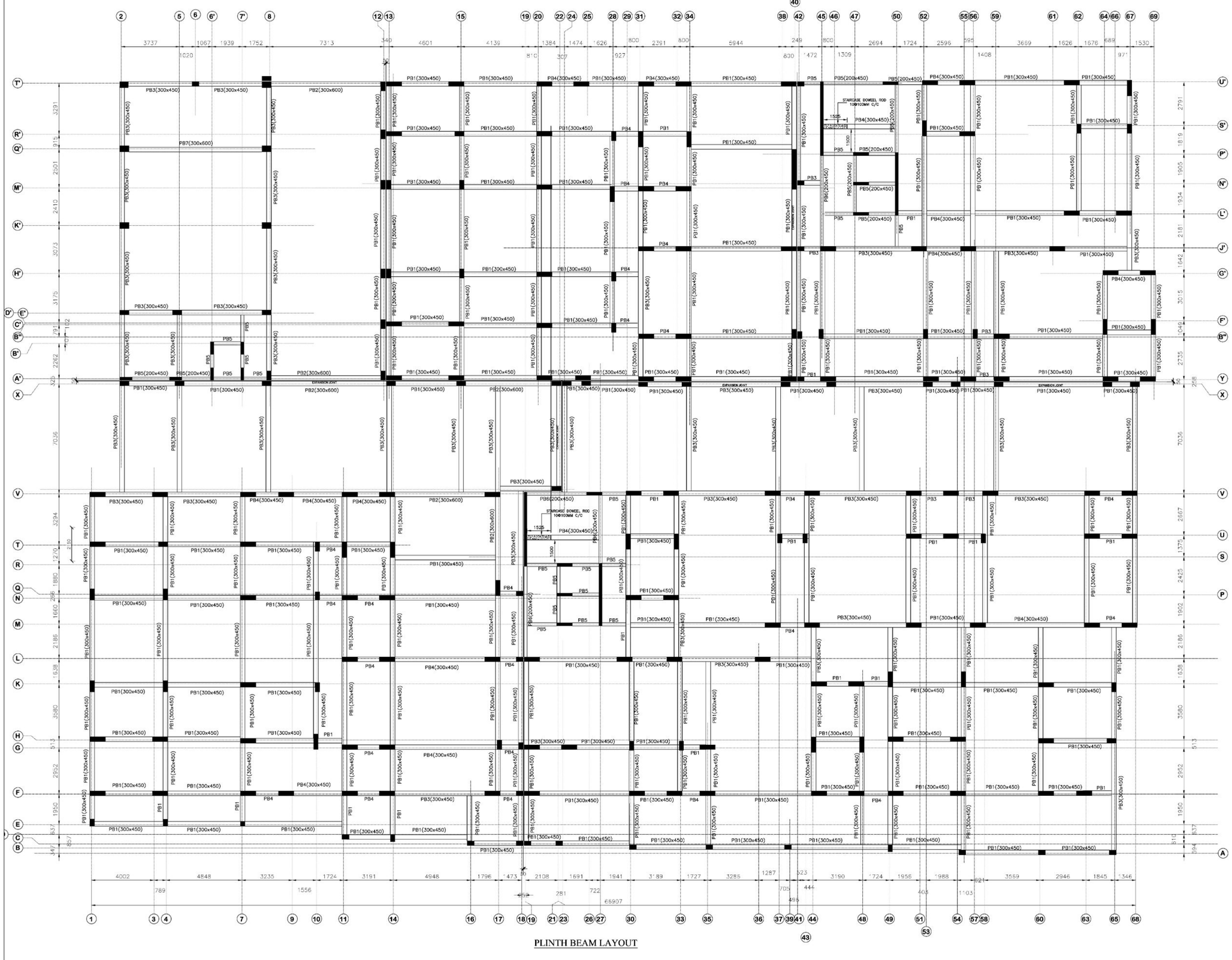
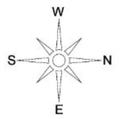


PLINTH BEAM LAYOUT

KEY PLAN :-



LEGEND :-

GENERAL NOTES :-

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
2. THIS DRG SHOULD READ ALONG CONJUNCTION WITH RESPECTIVE ARCH.DRG
3. LEVELS INDICATED ARE UNFINISHED STRUCTURAL TOP LEVEL.
4. CONCRETE MIX = M30
5. STEEL GRADE = Fe550
6. CLEAR COVER TO OUTERMOST BAR, LINKS & STIRRUPS

FOOTING	= 50MM
COLUMN	= 40MM
BEAM	= 30MM
SLAB	= 25MM

7. LAP LENGTH (Ld) OF ALL BARS SHOULD BE 46 TIMES DIA OF THE BAR. WHEN BARS OF TWO DIFFERENT DIAMETERS ARE TO BE SPLICED, THE LAP LENGTH SHALL BE CALCULATED ON THE BASIS OF DIAMETER OF THE LARGEST BAR.
8. GROSS SBC OF SOIL IS 350KN/SQM AT 2.5M DEPTH FROM NGL AS PER SOIL REPORT
9. THIS STRUCTURE HAS DESIGNED AS STILT +5 FLOORS ONLY

SETTING OUT COORDINATE
REFER ARCH. DRAWING

Project Number

Project Type
APARTMENT BUILDING

Client
NOVASCAPE

Contractor
NOVASCAPE

DATE : 02.02.2026

DRN BY :

CKD BY :

APP BY :

PLINTH BEAM LAYOUT

Type
SITE PLAN

Drawing No.
S1-03-01

Revision No.
R1

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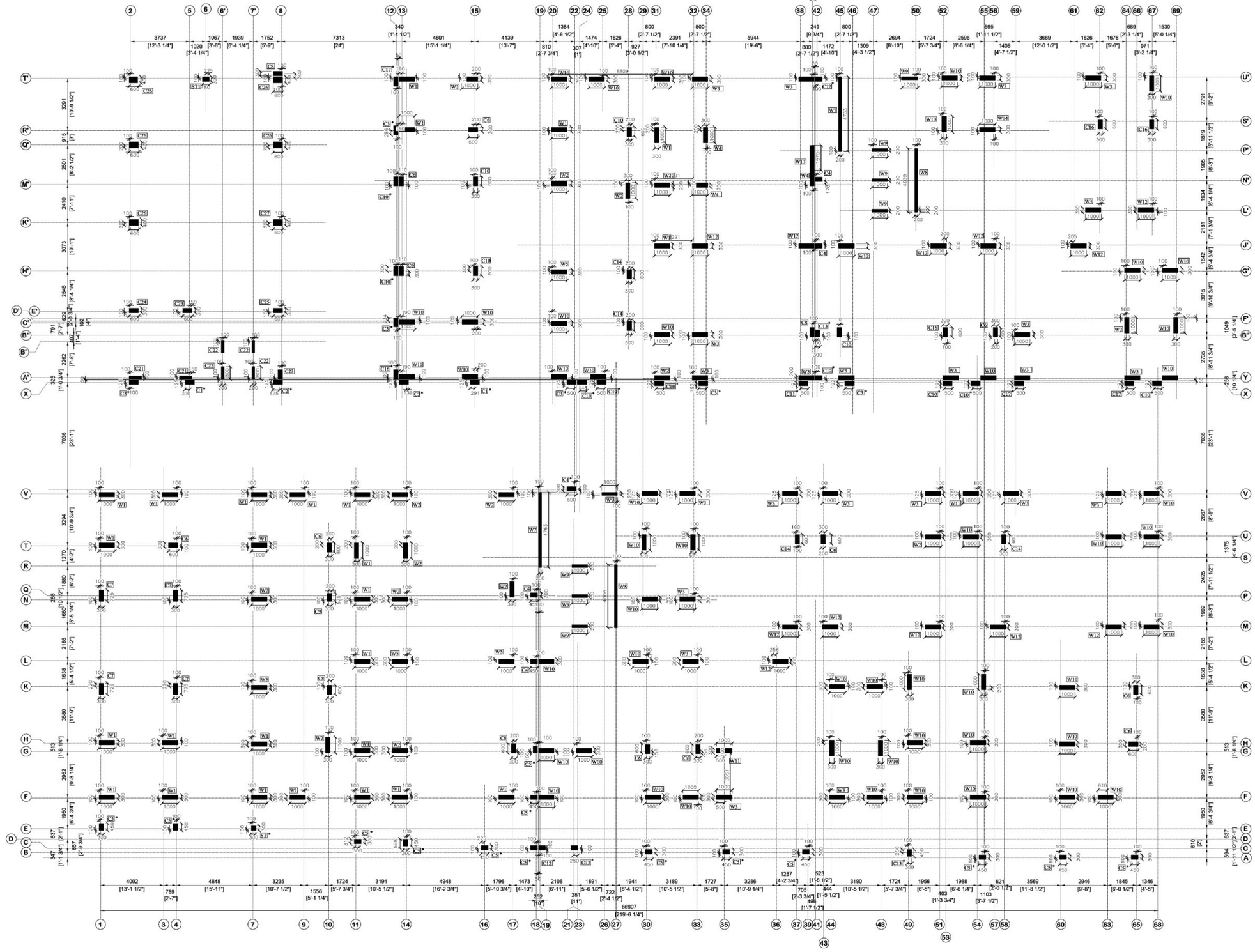


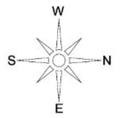
COLUMN LAYOUT

NOTE : COLUMN ROD DETAILS CAN BE REFFERED FROM PREVIOUS GFC DRAWINGS

SHEET 1 : NAMED S1-01-02 & DATED 29.12.2026

SHEET 2 : NAMED S1-01-03 & DATED 29.12.2026

KEY PLAN :-



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DATE : 02.02.2026

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APP BY :

COLUMN LAYOUT

Type
SITE PLAN

Drawing No.	Revision No.
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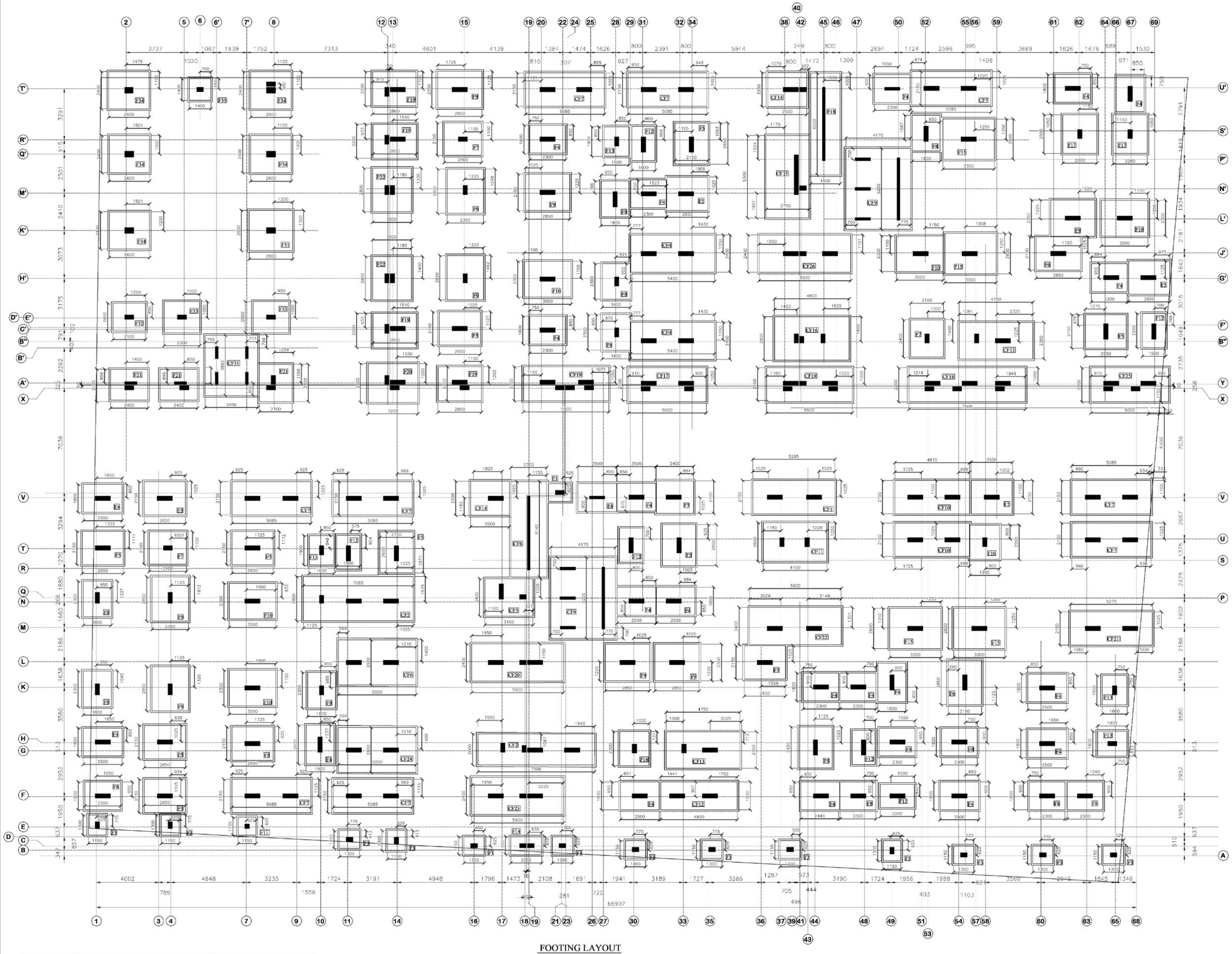
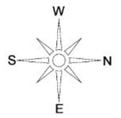


FOOTING LAYOUT

NOTE : FOOTING ROD & DEPTH DETAILS CAN BE REFFERED FROM PREVIOUS GFC DRAWINGS

SHEET 1 : NAMED S1-02-02 & DATED 29.12.2026

KEY PLAN :-



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CKD BY :

APP BY :

FOOTING LAYOUT

Type
SITE PLAN

Drawing No.
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STRUCTURAL DESIGN REPORT

" PROPOSED RESIDENTIAL APARTMENT BUILDINGSTILT, FIRST, SECOND, THIRD, FOURTH, FIFTH FLOOR & TERRACE FLOOR OF G+5 FLOORS IN SF.NO. 422/4A2, 422/5A2 & 422/5B2 AT KEERANATHAM VILLAGE, ANNUR TALUK, COIMBATORE

CONTENTS:

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FOREWORD

-Description of Project

PROPOSED RESIDENTIAL APARTMENT BUILDING STILT, FIRST, SECOND, THIRD, FOURTH, FIFTH FLOOR & TERRACE FLOOR OF G+5 FLOORS IN SF.NO. 422/4A2, 422/5A2 & 422/5B2 AT KEERANATHAM VILLAGE, ANNUR TALUK, COIMBATORE

–Objective o f the Report. The objective of there portis to provide and furnish details related to Project and structural considerations.

–Scope of the Report.

The Structural Report covers the complete Structural Elements design (column) considerations for analysis of lateral loads & gravity loads.

CODES,STANDARDS

AN DREFERENCES Statutory Requirements:

The design of structural and other building services will comply with the following requirements:

- Nation l Building Code
- The Building Regulations
- The Environmental Protection Actinlia is on with the Environmental Agency.
- Fire prevention and detection in compliance with the local Fire Regulation.

DESIGN STANDARDS:

Specific applicable code and standards will be identified and adopted in t h e designphilosophiesasappropriatetothestructuralelements.ThelatesteditionsoftheCodesandStandardswillbeusedindesigns.AlldesignworkshallbebasedonIndianStandardsandCodes with latest revision, with amendments if any, as on date. **Loads:**

IS:875-

1893 Code of Practice for design loads (other than earthquake)for Buildings and structure(All parts)

IS:1893-2016 Criteria for earth quake resistant design of structure

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Foundations:

IS:1080-1985(2016)Code of Practice for design and construction of Shallow foundations on soils (other than raft, ring and shell)

IS:1904-1986(2015)Code of Practice for design and construction of foundations in soils general requirement

IS:2950-1981(2013)Code of Practice for design and construction of raft foundationIS:2974-1998(2013/2015)Code of Practice for design and construction of machine foundations(All parts)

IS:8009-1976/1980(2013/2015)Code of Practice for calculation of settlement of foundations (All parts)

RCC:

IS:456-2000:Code of Practice for plain and reinforced concreteIS:458-1988 Specification for precast concrete pipes

IS:3370-2009Code of Practice for concrete structures for the storage of liquids:(All parts)IS:4326-2013 Code of Practice for earthquake resistant design and construction of buildings IS:5525-1969(2013) Recommendation for detailing of reinforced concrete works

IS:1786- 2008Specification for high strength deformed steel bars and wires for concrete reinforcement IS:10262-2009 Recommended guide lines for concrete mix design

IS:1893 (Part-1)-2016 Criteria for earthquake resistant design of structures(General provisions and building).

IS:13920-1993:Ductile detailing of reinforced concrete structures.

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Miscellaneous:

IS:432(part 2)-1995 Specification for mild steel and medium tensile steel bars and hard- drawn steel wire for concrete reinforcement

IS:6313 (partII)-2001Standardsforanti-termitetreatment

IS:1905-1998Code of Practice for structural use of un reinforced masonry IS:3067-

1995 Code of Practice for general design details and preparatory works for damp proofing and water proofing of buildings

SP:6-1998 Hand book for structural engineers(all parts)SP:7- 2005 Nationa l Building Code of India

SP:16-1999 Design Aids for reinforced concrete to IS:456-1978

SP:22-1982 Explanatory handbook on codes for earthquake engineering (IS:1982- 1975andIS:4326-1976)

SP:24-

1983 Explanatory handbook on Indian Standard code of Practice for plain and reinforced concrete

SP:34-1987Handbook of concrete reinforcement and detailing(SCIP)

Wherever appropriate Indian Regulation does not exist for any particular item, appropriate British standards will be used.

Material:

IS:269-2015 Specification for Ordinary, rapid hardening and low heat Port land cement. IS:455-1995 Specification for Portland blast furnaces lag cement.IS:1489-

1991Specification for Portland pozzolana cement

IS:4031-1991Method of physical tests for Portland cement.

IS:383-2016 Specification for coarse and fine aggregates from natural sources for concrete.IS:516-1999 Method of test for strength of concrete.

IS:1199-1999 Method of sampling and analysis of concrete.

IS:1566-2000 Specification for plain hard drawn steel wire fabric for con crete reinforcement.

IS:4990-1998 Specification for ply wood for concrete shuttering works.

IS:2645-1999 Specification for integral cement water proofing compounds.

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4/3/2026

–DESCRIPTION OF STRUCTURE

–Location

G+5 FLOORS IN SF.NO. 422/4A2, 422/5A2 & 422/5B2 AT KEERANATHAM VILLAGE, ANNUR TALUK, COIMBATORE

–Building Description. The Residential Building Consists of the following: Kindly study the architectural drawings for better understanding

- Stilt+5floors+Terrace

–Structural Arrangement:

- The Structural Systemize RCC framed Structure comprising of Conventional RCC Slab& RCC Beam supported by RC structural columns/walls with Primary & Secondary beams. Flat slabs beam sand Columns Are considered to act as a rigid diaphragm to transfer the lateral forces to the lateral load resisting elements.

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–DESIGNAPPROACH

1.4.1–

Design data Loads:

Dead loads:

Deadloadshallincludeweightofallstructuralandarchitecturalcomponents.Self-weightofthematerialsshallbecalculatedonthebasisofunitweightsgiveninis:875.

- Floorfinishof75mmthickness
  For floors :180kg/sq.m(1.8kN/sq.m)
- False ceiling/ducting +Sprinklers :20kg/sq.m(0.2kN/sq.m)
- Dry Partition :100kg/sq.m(1.0kN/sq.m)
- Self-weight of Plain concrete :2400kg/cu.m(24kN/cu.m)
- Self- weight of RCC :2500kg/cu.m(25kN/cu.m)
- Solid block masonry :2500kg/cu.m(25kN/cu.m)
- Soil(Dry) :1800kg/cu.m(18KN/cu.m)
- Soil(Wet) :2000kg/cu.m(20kN/cu.m)
- Water :1000kg/cu.m(10kN/cu.m)

Live loads:

Thesuperimposedloadsshallbecalculatedinaccordancewithis:875(Part-2)basedonOccupancy Classification. For multiple occupancies of use in the building shall be referred with the other appropriate comparable occupancy classification as per Table.1ofIS875(Part-2)-1987.

Followingliveloadsareconsideredwhiledesigningthestructuralelementsapart from the dead loads

Floors

- Typical floors :200kg/sq.m(2.0kN/sq.m)
- Terrace :150kg/sq.m(1.5kN/sq.m)

Actual loading due to lifts loads shall be ascertained and design live loads are suitably modified(if required) and considered.

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Load calculation:

Roof Slab Load		Thicknessi n m	Unit Weight- kN/m3	Load	
Dead Load-Floor					
False ceiling				0.200	kN/sq.m
Partition				1	
Floor finishes		0.075	24	1.800	kN/sq.m
			Total=	**3**	kN/sq.m
Live Load-Floor		a)For Typical floors		**2.0**	kN/sq.m
Live Load–Roof accessible				**1.5**	kN/sq.m

All sunken are as additional sunken filling load of 0.75kN/m^2 is considered in Dead load.

200mmSolidBlockwallLoadonGradeBeam =(4.114-0.3)x0.2x25=19.1kN/m Solid Block wall@ Typical floor =(3-0.3)x0.2x25=13.5kN/m

Parapet wall load on terrace =1.2x0.2x25=6.0kN/m

Head room load =2.5x0.2x25=12.5kN/m

Wind Loads

TheWindpressureshallbecalculatedinaccordancewithIS:875(Part-3)-2015.ForCoimbatore,thebasicwindspeedsareconsideredat39m/sec.

Basic Wind Speed Risk Coefficient	Vb k1	:39m/s :1(k1correspondsto50years Mean Probable Design Life of Structure)
Terrain, height, structure size factor	k2	:To suit the height of the structure forterraincategory2
Topography factor	k3	:1.00
Cyclone region factor	k4	:1.00
Design mean hourly wind speed	Vh,d	:Vb×k2×k2×k3Xk4
Design hourly wind pressure	pd	:0.6×Vz^2

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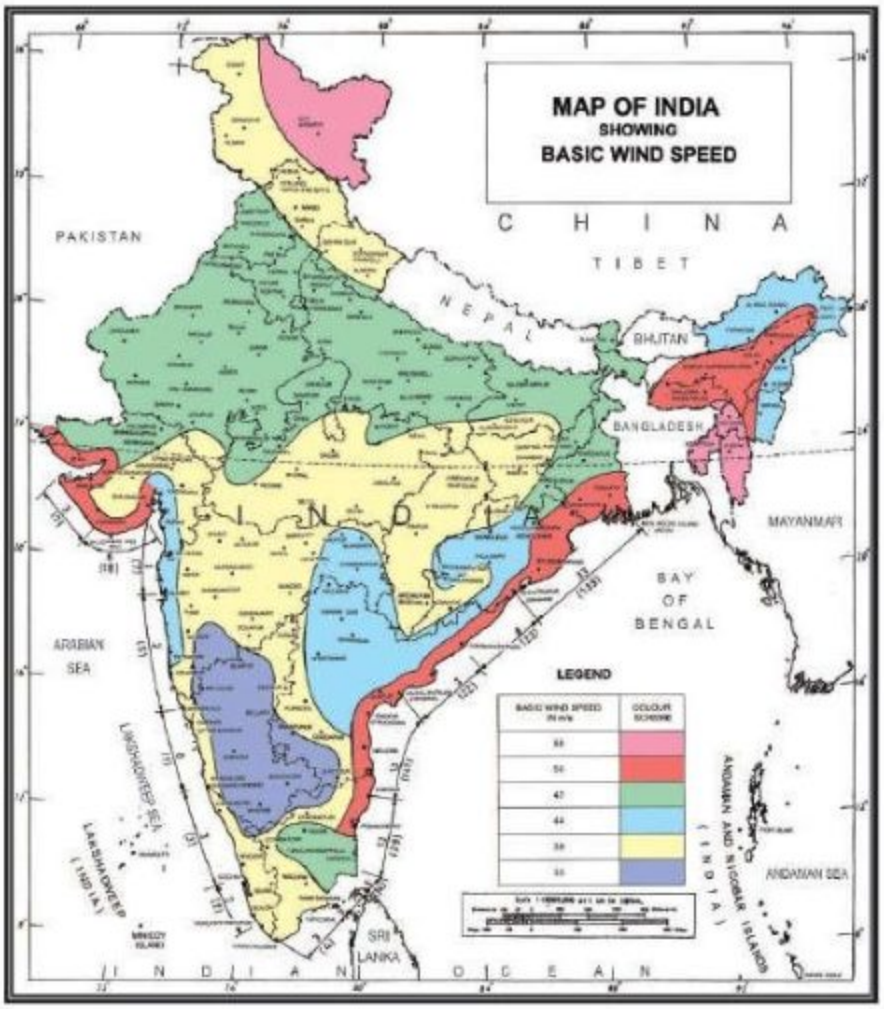

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Seismic Forces:

Coimbatore falls under seismic zone III as per IS 1893-2016 (Part 1) (Sixth Revision) and has the following factors to be considered for designs. Ductile detailing is required for the structural elements.

(Please refer attached map)

Seismic Zone	III
Seismic Zone factor (Z)	:0.16(AsperTable3-IS:1893-2016CL-6.4.2)
Design horizontal seismic coefficient(Ah)	:(Z/2)*(Sa/g)*(I/R)
Importance factor(I)	:1.5(RefTable8-IS:1893-2016CL7.2.3)
Response reduction Factor(R)	:4(RefTable9(iv)-IS-1893-2016CL7.2.6)

Soil type :1(Weighted average of N value of soil layers from depth off ounding is considered.)

Damping Ratio for RCC :5%

Ra s perTable9(v)of IS: 1893-2016isbasedonBuildingwithductileRCstructuralwallswithRCOMRF

Sa/g–Average response acceleration coefficient for soil sites as per Fig.2 of IS:1893-2016anditisarrivedbasedonappropriatefundamentalnaturalperiodofstructurecalculatedas perclause:7.6.2.

Design horizontal seismic coefficient(Ah):(Z/2)*(Sa/g)*(I/R)

:(0.16/2)*(1.5/4)*(Sa/g)

Ah :0.03*(Sa/g)

Design seismic base shear, Vb	:Ah*W where, W- seismic weight of building
Time Period considered Dynamic	:Building with RC Structural Walls
Analysis with P- Delta effect(IS1893-2016CL 6.4.3)	:Not considered in the analysis

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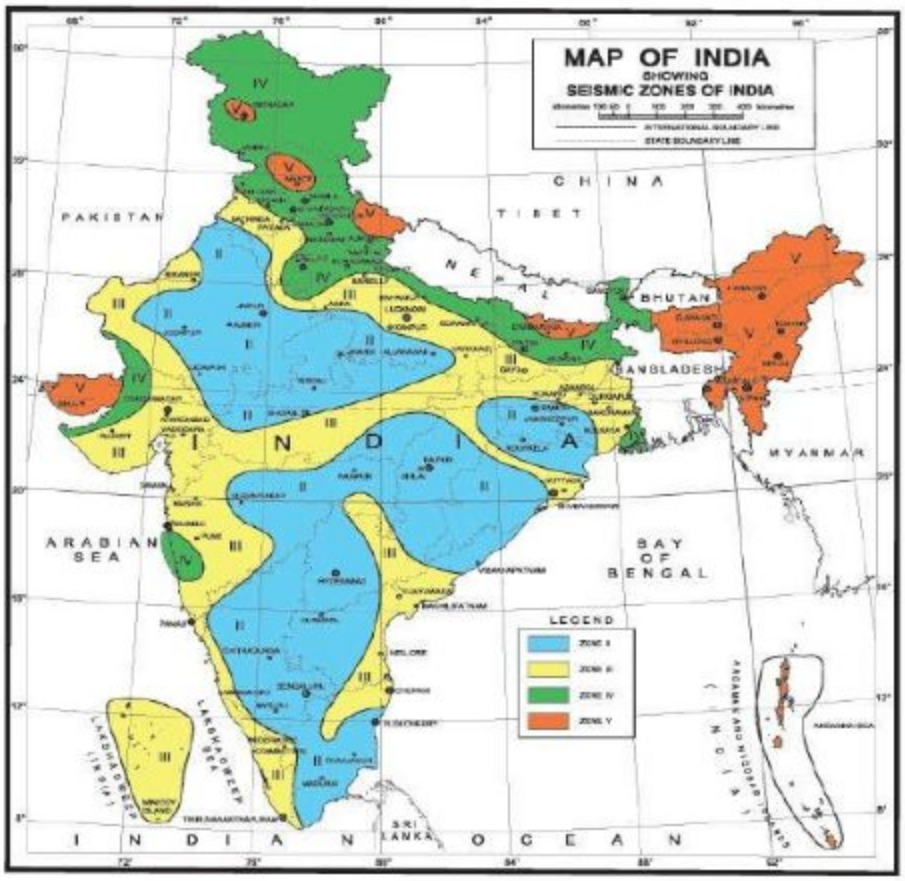
TableNo:03				
Zone F actor, Z				
(Clause6.4.2)				
SeismicZone	II	III	IV	V
SeismicIntensity	Low	Moderate	Severe	VerySevere
Z	0.10	0.16	0.24	0.36



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Expansion joint

Expansion joints are not provided in building.

1.4.2-DurabilityConsiderations:

Environmental conditions,

Corrosion and Fire protection for concrete and structural steel

Environment :Moderate

Exposure conditions :Concrete surfaces exposed to severerainor ccasional freezing whilst wet or severe Condensation.

Fire protection :Thickness of the structural elements as per table15,16&16Aclause26.4ofIS456-2000.

Minimum grade of concrete :Moderate exposure-M20

Nominal cover to reinforcement :For Moderate Exposure Nominal cover should not be less than30mm for walls,

50mm for footings,40mm for column,25mm for beams and 20mm for slabs.

1.4.3-FireRating:

- Thickness of the structural elements as per table 15, 16 & 16Aclause26.4of IS 456-2000.Two Hours fire rating is considered with wall thickness of 160mm& with minimum percentage of steel0.4%(including both vertical and horizontal reinforcement) as perIS:456-2000,Cl:21,Fig:1.
- Nominal covers for 1.5hr. fire resistance:

Nominal Cover						
BEAM		Slabs		Ribs		Columns / shear wall
Simply support	continuous	Simply supported	continuous	Simply support	Continuous	
mm	mm	mm	mm	mm	mm	mm
20	20	25	20	35	20	40

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3/2026

-ANALYSISMETHODOLOGY:

This structure has physic linter face with almost all the disciplines like Geotechnical, MEP Services and Landscape etc. The Structure proposed is of cast in-situ concrete construction with shear walls suitably placed. The core walls around lifts are of cast in-situ concrete to resist lateral forces. The Structural design of the proposed project is based on Indian Standard Codes and is analyzed for Dead, Live, Wind and Seismic Load conditions taking into relevant load combinations recommended by the codes.

The Vertical Loads including the dead and super imposed loads are transferred to the soil through beams, core walls and footings. Footings are sized with consideration to the safe bearing capacity of soil at the level of transfer of load recommended by specialist soil investigation consultants. The Lateral loads due to wind and seismic forces are dissipated to soil through the proposed Reinforced Concrete Core Walls/columns.

-LOADCOMBINATIONS:

Load combinations Used for Strength, Serviceability are tabulated below:

Load Combination	Limit State of Collapse				Limit State of Serviceability		
	DL+SDL	*LL*	*WL/EL*	*TL*	*DL+SDL*	*LL*	*WL/EL/TL*
DL+LL	1.5	1.5	—	—	1	1	—
DL+WL	1.5or0.9*	—	1.5	—	1	—	1
DL+EL	1.5or0.9*	—	1.5	—	1	—	1
DL+LL+WL	1.2	1.2	1.2	—	1	0.8	0.8
DL+LL+EL	1.2	1.2	1.2	—	1	0.8	0.8

The various loads are combined in accordance with the stipulations in IS: 875(Part5)-1987; whichever combination produces the most unfavorable effect in the building foundation or structural member concerned may be adopted.

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-DESIGNMETHODOLOGY:

- All R .C.C structures shall be designed according to the Limit State Method as specified in IS:456- 2000 and in accordance with clauses mentioned for structural element sizes inIS13920- 2016.
- Forces and moments from the 3Danalysis output for the worst combinations are used for the design of the structure.
- The foundations are designed for critical load combination.
- The structure is analyzed for specific loads like dead load, live load, wind and seismic load sand for the load combinations as given in the relevant codes.

-ACCEPTANCECRITERIA:

-Deflection Limits:

For Reinforced concrete works:

- Limiting values of deflection (Short and Long term) as per clause 35.3 of IS: 456-2000isfollowedinthedesign.
- Limiting value for long term deflection is considered as span/250 and for the long-term deflection after erection of partitions& finishes is considered as span/350or20mmwhicheverlessasperIS456-2000.

-Cracking Limits:

- Limiting values of crack width as per clause 35.3ofIS:456-2000 is followed in the design.
- In general ,for slabs and beams ,the crack width is limited to 0.2mm.
- For basement retaining wall and water retaining structures,c rack width is limited to 0.1mm.

-Permissible Drift Limits:

- As per IS-1893 (Part1) :2016, clause 7.11.1, Storey drift in any storey due to minimum specified design seismic lateral force shall not exceed 0.004 times the storey height design.
- AsperIS-456-2000 clause20.5,Laterals way due to wind load should not exceed H/500(H is the total height of structure).

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-Soil data: Foundations are designed based on Geo Technical investigation report and will dissipate all the vertical and horizontal loads safely to the soil below .As per the soil investigation report received from geotechnical consultants is **Isolated Footing**.

6.CONCLUSION & RECOMMENDATIONS:

- For this Site, **OPEN FOUNDATION** is recommended.
- The recommended safe bearing capacity is **379 kN/m^2** for this site location.
- The depth of foundation is adopted as **3.5m to 4.0m** from Existing Ground Level to design the foundation according to load conditions and structural requirements
- If water table is exists during execution of foundation, should be laid foundation concrete in dry condition.
- Recommendations are given based on assumption that same strata or harder strata below extends below the explored depth.
- It is recommended that backfilling in the foundation should be carried out proper compaction.
- The results and recommendations given in this report are based on the results of the tests on sub-soil samples collected from boreholes.If in actual execution,any variation is found,the consultants may also be referred.

-Detailing Requirements:

- Detailing for the structural elements shall be done in accordance withIS:13920-2016,taking R=3 as per Table9(v)ofIS:1893-2016isbased on perimeter RC Ordinary Moment-Resisting Frames
- Detailing for all structural members shall be in accordance with IS:456 & SP:34.

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