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DIGITALLY VERIFIED RECORD

STRUCTURAL DESIGN CALCULATION REPORT FOR THE PROPOSED CONSTRUCTION OF RESIDENTIAL UNITS AND CLUB HOUSE (Non-High Rise), AT T.S.No: 8/2 (Old S.F.No:162), Block No. 25, Ward:U(21), & T.S.No: 42 (Old S.F.No:156/1 Part), Block No:23, Ward:U(21), Coimbatore Corporation (North zone), Ganapathy village, Coimbatore District.

19.06.2025	Design Basis Report	OK	KALARANI	PARIMALA	RAVICHANDRAN
DATE	**DESCRIPTION**	**STATUS**	**PREPARED BY**	**REVIEWED BY**	**APPRVD. BY**

STRUCTURAL CONSULTANT

ARCHITECTS PLUS

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M/s. ROYAL SHELTER

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J.P. Tower, 7th Cross (East)
Thillainagar, Trichy-620 018.

For ROYAL SHELTER
Managing Partner
Power Agent

STRUCTURAL DESIGN CALCULATION REPORT FOR THE PROPOSED CONSTRUCTION OF RESIDENTIAL UNITS AND CLUB HOUSE (Non-High Rise), AT T.S.No. 8/2 (OLD S.F.NO:162), BLOCK NO. 25, WARD:U(21), & T.S.No. 42 (OLD S.F.NO:156/1 Part), BLOCK NO.23, WARD:U(21), COIMBATORE CORPORATION (NORTH ZONE), GANAPATHY VILLAGE, COIMBATORE DISTRICT.

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STRUCTURAL DESIGN CALCULATION REPORT FOR THE PROPOSED CONSTRUCTION OF RESIDENTIAL UNITS AND CLUB HOUSE (Non-High Rise), IN T.S.No. 8/2 (OLD S.F.NO:162),BLOCK NO. 25,WARD:U(21), & T.S.No. 42 (OLD S.F.NO:156/1 Part), BLOCK NO.23, WARD:U(21), COIMBATORE CORPORATION (NORTH ZONE), GANAPATHY VILLAGE, COIMBATORE DISTRICT.

1. FOREWORD

The intent of this document is to identify and record all the pertinent input requirements, analysis & design criteria for structural design of the building. It is aimed at formulating the basis of the structural analysis, design & detailing work that the Structural Engineer is planning in delivering the structural scheme of the building. The scheme will be compatible with the architectural theme, satisfy the functional needs, at the same time conforming to the Indian Standards and other applicable building norms to achieve safe, stable, strong and yet optimally economical structures.

The parameters adopted in this report are going to be the basis of the structural design calculations. This report covers the minimum design requirement to establish the unified design basis that will form the overall design philosophy to be adopted in the structural design of the proposed building.

The design will aim to achieve

- Structural & functional integrity.
- Desirable Structural performance under characteristic service design loads.
- Structural durability & maintainability.

2. PROJECT DESCRIPTION

The Proposed Construction of Residential units and Club house buildings (Non-High Rise), in T.S.No:8/2 (Old S.F.No:162), Block No: 25, Ward:U(21), & T.S.No:42 (Old S.F.No:156/1part), Block No:23, Ward:U(21), Coimbatore Corporation(North Zone), Ganapathy Village, Coimbatore District.

2.1. Agencies

Client: M/s. ROYALSHELTER.

Architect: P. Ravichandran.

Structural Consultant: Architects Plus, Trichy.

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2.2. The Building

The proposed construction of a Residential units and Club house is situated at T.S.No:8/2 (Old S.F.No:162), Block No: 25, Ward:U(21), & T.S.No:42 (Old S.F.No:156/1part), Block No:23, Ward:U(21), Coimbatore Corporation(North Zone), Ganapathy Village, Coimbatore District. It comprises 16 Residential Units with Ground Floor + 2 Floors (Blocks – H1,H2, J1,J2,J3,J4,J5, K1,K2, L1, L2,M1,M2) & 1 Club house with Stilt + 3 Floors (BLOCK - Y)

Structurally, the building is essentially a R.C.C. framed structure with columns and the floor framing system is conceptualized with a conventional system of Beams with slabs. The columns are connected to each other with a network of R.C.C beams and RC slabs with the slabs acting as in- plane rigid diaphragms for each of the floors & Roof. The Beams are designed as frame elements in the 3D model and it is designed as non-ductile Frames. The structural elements are designed with adequate sizes proportion to its span &loads with the Column sizes 230x300 /230x375mm, 230x300/230x450mm, 300/230x525 & 300/230x600 and the Beam sizes of width 230mm and depth varies from 300mm to 680mm etc .The slab thickness varies from 125mm to150mm.

2.3. Architectural/Structural Configuration

Table: Architectural Floor heights/Structural& Details:

2.3.1 For Residential building:

BUILDING CONFIGURATION	
No. Of Floors in All Units	**Gound +2 floors**
Ground floor height	3.35m
1st Floor height	3.35m
2nd Floor height	3.35m
Foundation System	**Isolated Footing**
Grade of concrete for Foundation	M30
Grade of concrete for Columns	M30
Grade of concrete for RC beams / RC slabs	M25
Grade of Steel	Fe500

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2.3.2 For Club House:

BUILDING CONFIGURATION	
Building Dimension in Plan	**22.82mx 13.41m (74'10.5" x 44'0")**
No. Of Floors	**Stilt+2+Roof**
Stilt floor height	3.04m
1st Floor height	3.81m
2nd Floor height	4.17m
LMR Slab	4.20m
Head Room Slab	2.90m
Foundation System	**Bored Cast In situ Pile**
Grade of concrete Footing, Basement slab & wall	M30
Grade of concrete for Columns, RC wall	M35
Grade of concrete for Floor beams/slabs	M35
Post-Tensioning Slab/Beam	M35
Non-Structural Grade Slab	M20
Grade of Steel	Fe 500

3. LIST OF CODES

In the analysis, design and detailing of the building, the following Indian Standard codes will be used.

3.1 Design Loads (Other Than Earthquake Loads)

ISCode	Description
IS875 (Part 1): 1987	Dead Loads (Unit Weight of Building Material and Stored Material)
IS875 (Part 2): 1987	Imposed Load
IS875 (Part 3):2015	Wind Load

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3.2 Designs for Earthquake Resistance

IS Code	Description
IS 1893: 2016	Criteria for Earthquake Resistance design of structures.
IS 4326: 1993	Earthquake Resistant Design and Construction of Buildings – Code of Practice
IS 13920: 2016	Ductile Detailing of Reinforced Concrete Structures subject to Seismic Forces - Code of Practice.

3.3 Design of Steel Structural Elements

IS Code	Description
IS 800: 2007	Code of Practice for General Construction in Steel
IS 2062	Steel for General structural purposes

3.4 Design of Concrete Elements

IS Code	Description
IS 456: 2000	Plain and Reinforced Concrete - Code of practice
IS 1904	Indian Standard Code of practice for design & construction foundations in Soil: General Requirements
IS 2911-(Part1- Sec2)	Indian Standard Code of Practice for Design and Construction of Pile Foundation-Bored Cast In situ Piles
IS 2974	Code of practice for design & construction of machine foundation
SP 16	Structural use of concrete. Design charts for singly reinforced beams, doubly reinforced beams and columns.
SP 34	Handbook on Concrete Reinforcement & Detailing
SP 7(Part IV)	National Building code of India
IS 1786-2008	Specification for high strength deformed bars and wires for concrete Reinforcement.
IS 3370 (part I)	Code of practice for concrete structure for the storage of liquids

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4. DESIGN PARAMETERS

4.1 Materials of Construction

The building is predominantly RCC frame structure with columns connected by beams & floor slabs being used as diaphragms in redistribution of lateral forces.

4.1.1 Concrete Grade

Concrete grade shall be M25 with minimum 28 day strength of 25 N/mm^2. Grade M30 concreted used for design of Isolated Footings & vertical elements like RC columns whereas used M25 grade for RC beam & RC Slab. Concrete Mix M10 has been used in filling, leveling courses (PCC) and other non-structural items. Density of reinforced concrete is assumed as 25.00 kN/cu.m.

Minimum cement content, water cement ratio etc. shall conform to IS 456:2000 code provisions for durability and strength criteria. The cementitious content shall be in the range of 375 kg/m^3 for M25 grade concrete. However trial mix shall be carried out and the cube tests are to be conducted in order to establish its design compressive strength. The design mix shall be approved by the Structural Engineer based on the trial mix results before adopt in to the construction. The slump shall be in the range of 50 to 100 for pumbable concrete.

4.1.2 Cement

Ordinary Portland Cement of grade 43 or higher confirming to IS 8112 and IS 12269 is specified for concrete M30 & M25 with cement content appropriate to the grade.

4.1.3 Aggregates

The sizes of coarse aggregates confirm to IS 383. Nominal maximum size of coarse aggregate to be 20 mm, suitably graded as per the requirement of mix design. The fine aggregates confirm to the specifications of IS 383.

4.1.4 Water

Water used for construction shall complied with stipulations given in CH456: 2000.

4.1.5 Reinforcement

High yield strength deformed bars conforming to IS 1786-2008 with f_y = 500 N/ sq.mm has to be used.

4.1.6 Structural Steel

MS steel with yield strength f_y = 250 N/ sq.mm has been used for Structural steel work shall conform to IS 226 and IS 2062 for Indian steel sections.

4.1.7 Concrete Cover

Following clear cover to all reinforcement is used in the design

a. Isolated Footing = 50mm
b. Column = 40mm
c. Beam = 30mm (Bottom and sides)
d. Slab = 25mm (Top and Bottom)
e. Water tanks / Sump tank
   On water face = 40mm (Top and Bottom)
   On other face = 30mm (Top and Bottom)

4.1.8 Development Length

Unless otherwise specified in the good for construction drawing, the Development length of 50 times diameter of bar is to be considered in the BBS & Facbrication.

4.1.9 Soil Parameters

The Soil Investigation Report No. GEO- G-061- 2020-21 dated 08.10.2020- 13.10.2020 carried out by Geo design india private limited, Coimbatore. Based on the soil report made available to us, there are three (7) bore holes are drilled for carry out field testing and to collect the soil samples. Standard penetration tests were conducted at change of soil layers and at specified intervals, commencing the test at 1.00m below the existing ground level. The relative density of different soil layers obtained from the N-Values. Disturbed and un-disturbed soil samples were collected from all the layers for visual observation, classification tests and strength characteristics of the soil layers. The sub-soil stratigraphy is relatively uniform i.e. difference between depth of occurrence and thickness of different layers are within normal range. The bore holes are drilled from the said EGL for soil investigation. From the bore log data at the bore holes top layer upto 2.60m to 2.90m is Clay / Clayey gravel soil. and 2.90m to 7.0m Soft disintegrated rock exist with « N » value >50. The Ground water table is observed far below.

4.2 Loading Standards

Table:Unit Weight ofMaterials:

Material	Unit weights
Plain Cement Concrete	25.00 kN/Cu.m
Solid Concrete Block Work	20.0 kN/Cu.m
Mortar Finishing	20.00 kN/Cu.m
Drysoil	18.00 kN/Cu.m
Saturated soil	10.00 kN/Cu.m
Glass	33.00 kN/Cu.m
water	09.81 kN/Cu.m

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4.2. Table: Gravity Load Calculations:

4.2.1: For Residential units Load Calculations:

Floor Slab:	
Self weight of 125 mm thick Slab	0.125x25 =3.125 kN/Sq.mt.
Self weight of 150 mm thick Slab	0.150x25 =3.750 kN/Sq.mt.
Self weight of 175mm thick slab	0.175x25 =4.375 kN/Sq.mt.
External /Internal Wall Load:	
For 230mm Thick. Wall	
Ground Floor	= (0.23x2.82x20) = 12.97kN/m
1st Floor & 2nd floor	= (0.23x2.82x20) = 12.97kN/m
Head Room	= (0.23x2.82x20) = 12.97kN/m
For 115 mm thick wall	
Ground Floor	= (0.115x2.82x20) = 6.5kN/m
1st Floor & 2nd floor	= (0.115x2.82x20) =6.5kN/m

4.2.2 Imposed Loads on Slab

The following are the imposed loads in the structural slabs, in addition to the self-weight and the floor finishes. *(Self-weight of slab will be as per the thickness mentioned in the respective drawings and the Floor finishes of 50 mm thickness have been considered on all floors).*

Structural steel work shall conform to IS 226 and IS 2062 for Indian steel Sections.

Table 4. 2.2.1 Rooms – All floors other than Terrace

LoadComponent	Thickness (mm)	Load	Units
Floor Finishes		1.5	kN/m2
Live Load for Residences		2.0	kN/m2
Live Load for Offices			
Live Load for Aminities blocks			

Table 4. 2.2.2 Toilets

LoadComponent	Thickness (mm)	Load	Units
Finishes		1.50	kN/m2
Sunk &Filled	100 mm	2.50	kN/m2
LiveLoad		2.00	kN/m2

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Table 4. 2.2.3 Terraces

LoadComponent	Thickness (mm)	Load	Units
Weathering course with Water-Proofing		2.5	kN/m2
LiveLoad		1.5	kN/m2

Table 4. 2.2.5 Staircases

LoadComponent	Thickness (mm)	Load	Units
Steps	150 (Riser) Assuming 75mm Avg thickness	1.8	kN/m2
Finishes	-	1.2	kN/m2
Live Load	-	2.0	kN/m2

4.3 Table: Gravity Load Calculations:

4.3.1 : For Club House Load Calculations:

Floor Slab:	
Self weight of 125 mm thick Slab	0.125x25 = 3.125 kN/Sq.mt.
Self weight of 150 mm thick Slab	0.150x25 = 3.750 kN/Sq.mt.
External/Lift/Staircase/Toilet Wall Line Load: (Fly ash bricks)	
For 230mm Thick. Wall	
Stilt Floor	= (0.23x2.55x20)+(0.03x2.55x20)=13.26 kN/m
1st Floor	= (0.23x3.15x20)+(0.03x3.15x20)=16.40 kN/m
2nd Floor	= (0.23x3.15x20)+(0.03x3.15x20)=16.40 kN/m
LMR	= (0.23x2.6x20)+(0.03x2.6x20) =13.6 kN/m
Head Room	= (0.23x2.35x20)+(0.03x2.35x20) =12.3 kN/m
For 115mm Thick. Wall	
Stilt Floor	= (0.115x2.55x20)+(0.03x2.55x20)=7.40 kN/m
1st Floor	= (0.115x3.15x20)+(0.03x3.15x20)=9.20 kN/m
2nd Floor	= (0.115x3.15x20)+(0.03x3.15x20)=9.20 kN/m

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4.3.2 Imposed Loads on Slab

The following are the imposed loads in the structural slabs, in addition to the self-weight and the floor finishes. *(Self-weight of slab will be as per the thickness mentioned in the respective drawings and the Floor finishes of 50 mm thickness have been considered on all floors).*

Structural steel work shall conform to IS 226 and IS 2062 for Indian steel sections.

Table 4.3.2.1 Car Parks

Load Component	Thickness (mm)	Load	Units
Floor Finishes		2.4	kN/m2
Live Load		3.0	kN/m2

Table 4. 3.2.2 Club House

Load Component	Thickness (mm)	Load	Units
Floor Finishes		2.4	kN/m2
Live Load		5.0	kN/m2

Table 4. 3.2.3 Toilets

Load Component	Thickness (mm)	Load	Units
Finishes		1.20	kN/m2
Sunk & Filled	200 mm	4.00	kN/m2
Live Load		2.00	kN/m2

Table 4. 3.2.4 Terraces

Load Component	Thickness (mm)	Load	Units
Weathering course with Water-Proofing		3.0	kN/m2
Live Load		2.0	kN/m2

Table 4. 3.2.5 Corridors, Passage, Lobbies, balcony

Load Component	Thickness (mm)	Load	Units
Finishes		1.2	kN/m2
Live Load		3.0	kN/m2

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Table 4. 3.2.6 Staircases

Load Component	Thickness (mm)	Load	Units
Steps	150 (Riser) Assuming 75mm Avg thickness	1.8	kN/m2
Finishes	-	1.2	kN/m2
Live Load	-	3.0	kN/m2

Table 4. 3.2.7 Lift Machine Rooms, Elec. Rooms

Load Component	Thickness (mm)	Load	Units
Finishes	-	1.8	kN/m2
Live Load	-	10.0	kN/m2

4.3.3 Expansion Joints

Expansion joints are normally provided when the structure is more than 45m length as per IS-456-2000, clause 27.2. The width of expansion joint shall be calculated as per IS-1893-2002, clause 7.11.3. In this case, no expansion joint has been provided considering the fact that the building length is only 30m which falls within the limit prescribed in the said clause and there is no exposed slab in the building except Terrace. The stresses developed by expansive forces caused due to temperature variation has been taken care by providing additional re-bars on the slabs at re-entrant corners and on the exposed Terrace appropriately.

5. PROPOSED APPROACH OF STRUCTURAL ANALYSIS

The building is a R.C.C columns connected by beams as frame structure. Slabs acting as rigid in-plane diaphragms have been considered. After preliminary sizing of various structural members, a computer model of the structural frame of the building is generated for carrying out computer analysis for the effects of vertical and lateral loads that are likely to be imposed on the structure.

The building structure has been analyzed using the Staad Pro software for the following computer models of the building floor analysis of all floors - for vertical loads with the entire building space frame. Staad Pro have been thoroughly tested, validated and recognized internationally by several organizations and are well suited for the analysis of building systems.

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Geometrical dimensions, member properties and member-node connectivity, including eccentricities will be modeled in the analysis problem. Variation in material grades, if present, will also be considered.

The permissible values of the load factors and stresses will be utilized within the purview of the Indian Standards.

The computer analysis will produce accurate individual member forces, reactions at foundation level and deflection pattern of the entire structure as well as individual members. This data will then be used to confirm/review the member sizes and arrive at the most appropriate design of the structural members. Some re-runs of the analysis program might be required for arriving at the optimum structural space frame characteristics that satisfy the strength and stability criteria in all respects.

Design of different structural elements will be carried out using In-house developed spreadsheets and packages.

The STAAD-Pro analysis model summary report and views are presented in **Annexure B.**

The following methods of modelling are adopted in creating STAAD-Pro 3D model,

- The STAAD-Pro model generated based on the shuttering drawing prepared using preliminary sizes.
- Sectional properties are assigned to all the structural elements as per the preliminary shuttering drawing.
- External & Internal filler wall loads are assigned as uniformly distributed line load on beams and as area load if the wall is intend to distribute on slab directly. These loads are assigned under SIDL type load case.
- Live Load reduction is considered in the design of Foundation and Column as per the Code: IS 875-1987 (Part-II), clause.3.2.1.
- Area design load i.e. Live load/SIDL or any other load is applied at floor relevant to its usage.
- All lateral loads & parameters are assigned as per Codes IS 1893-2016 & IS 875-2015.
- Temperature loads are applied on to the terraces which are directly exposed to sun includes podium, Roof etc.
- Beams under Torsion is required to maintain Equilibrium will be designed for Torsion in accordance with IS 456-2000, clause 41.1 to 41.4 and for all other beams torsional stiffness is neglected in the analysis by applying stiffness modifier as 0.01 to torsional constant "J". Hence no specific design for Torsion is required for these beams.
- Trichy falls in seismic zone-II. Hence ductile detailing is not followed in the design and detailing of structural elements.
- Concrete cover to reinforcement complied accordance with IS 456-2000, Tabl.16 & 16A.

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Area Load & Application: Applied as area load with intensity proportionate to its usage as mentioned in the Loading clause in the DBR.

Line (Wall) Load & Application: Filler wall loads are calculated appropriately and Applied as uniformly distributed load are calculated as follows,

6. LOAD COMBINATION

The various loads shall be combined in accordance with the stipulations in IS 875 (Part 5) 1987 and IS 456: 2000. The structural elements shall be designed for the combination that produces most unfavorable effect out of the following combinations.

The results obtained from the computer analysis in the form of member forces and reactions will be used for design the structural members. Following load combinations of the member forces will be considered for arriving at the design forces. The analysis considered load factor is as follows,

Combination of Load: (D.L x1.5) + (L.L x 1.5)

7. DESIGN OF STRUCTURAL ELEMENTS

For the design of R.C.C. elements, the Limit State Method will be used as per IS 456-2000.

Materials of construction will be predominantly concrete with consideration for strength and durability. The grade of concrete is suggested as M25 for Foundation (Isolated Footing) & columns, whereas for RC Beam & RC Slab grade of concrete has to be M25 and for other structural elements considering the level of stresses to be borne by the members both in compression as well as flexure. High Yield Strength Deformed bars conforming to IS: 1786 with F_y = 500 MPa will be used as reinforcement. Structural steel, if any with Fy = 250 Grade shall be used.

Covers to reinforcement shall be in accordance with IS: 456:2000 corresponding to **moderate exposure conditions** for the super-structure or severe exposure conditions for the sub-structure and to satisfy a fire rating of 2 hrs as per National building code of India- SP7 (part IV).

8. FOUNDATION FOR THE BUILDING

The proposed Residential development comprises 2 types of structures 1) Ground + 2 floors and 2) Stilt + 3floors. The vertical elements like Columns are moderately loaded. The structure is provided with columns are adequately spreaded across in order to satisfy the structural requirements for both gravity and lateral loads. Based on the sub soil condition presented in the Soil Investigation Report No. GEO-G-061-2020-21 Isolated Footings are adopted for foundation system.

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Based on the sub soil condition presented in the Soil Investigation Report No. GEO-G-061-2020-21 dated 08.10.2020-13.10.20 carried out by Geo design India private Limited, Coimbatore, Isolated Footings are adopted for Foundation system. As per the soil test report recommendation, isolated footing are designed as foundation system using the recommended SBC of 250 kN/m^2 at a depth of 3.0m below the NGL. The Footings are rest over the medium dense with « N » value is more than 50 at **3.0m depth** from measured from NGL

9. STABILITY OF STRUCTURES

1. For the purpose of stability of the structure as a whole against overturning, the restoring moment shall not be less than 1.2 times the maximum overturning moments due to dead load plus 1.4 times the maximum overturning moments due to imposed loads. In case where dead load provides the restoring moments only 0.9 times in dead load shall be considered. The restoring moments due to imposed loads shall be ignored.

2. The factor of safety against sliding shall not be less than 1.40.

3. Factor of safety against buoyancy shall be not less than 1.20 ignoring the superimposed loading.

4. Structural Stability certificate with design calculations with words structurally is safe and sound.

10. OTHER DATA

Specific requirements of floor and wall cutouts for services, sinking (extent & depth) of floors in services, kitchen, utility and toilet areas, external architectural features, and entrance canopies are provided as required by Architects and Service Consultants. The relevant information is obtained from them in the form of drawings.

Lift loads and lift machine room equipment and cut out layouts will be obtained from the lift manufacturers. An impact factor of 100% will be considered in the lift supporting structures.

11. R.C Design

The structures are analyzed for the various load combinations as per IS: 456-2000. In house spread sheet is being used for the structural element like slab, beam, column etc for the forces extracted from the Staad Pro analysis output. For the design of the R.C.C structures the recommendations of IS: 456-2000 is followed. Limit State design is adopted with appropriate load factors with the various load combinations for the different structural elements as follows. The General arrangement drawing is given in **Annexure A.**

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11.1 Design of Foundation

Based on the sub soil condition presented in the Soil Investigation Report No. GEO-G-061-2020-21 dated 08.10.2020-13.10.20 carried out by Geo design India private Limited, Coimbatore, Isolated Footings are adopted for Foundation system. As per the soil test report recommendation, isolated footing are designed as foundation system using the recommended SBC of 250kN/m^2 at a depth of 3.0m below the NGL. The Footings are to rest over the medium dense with « N » value is more than 50 at **3.0m depth** from measured from NGL. The Isolated Foundation Layout drawing is given in **Annexure C.**

11.2 Design of Columns

R.C Columns will be designed for uni-axial/bi-axial bending for the forces of critical load combination depends upon the nature of behavior. The designs are made using Staad Pro/in-house spread sheet as per the guide lines of IS: 456-2000 adopting limit state method. The RC design of Column design is given in **Annexure D.**

11.3 Design of Beams

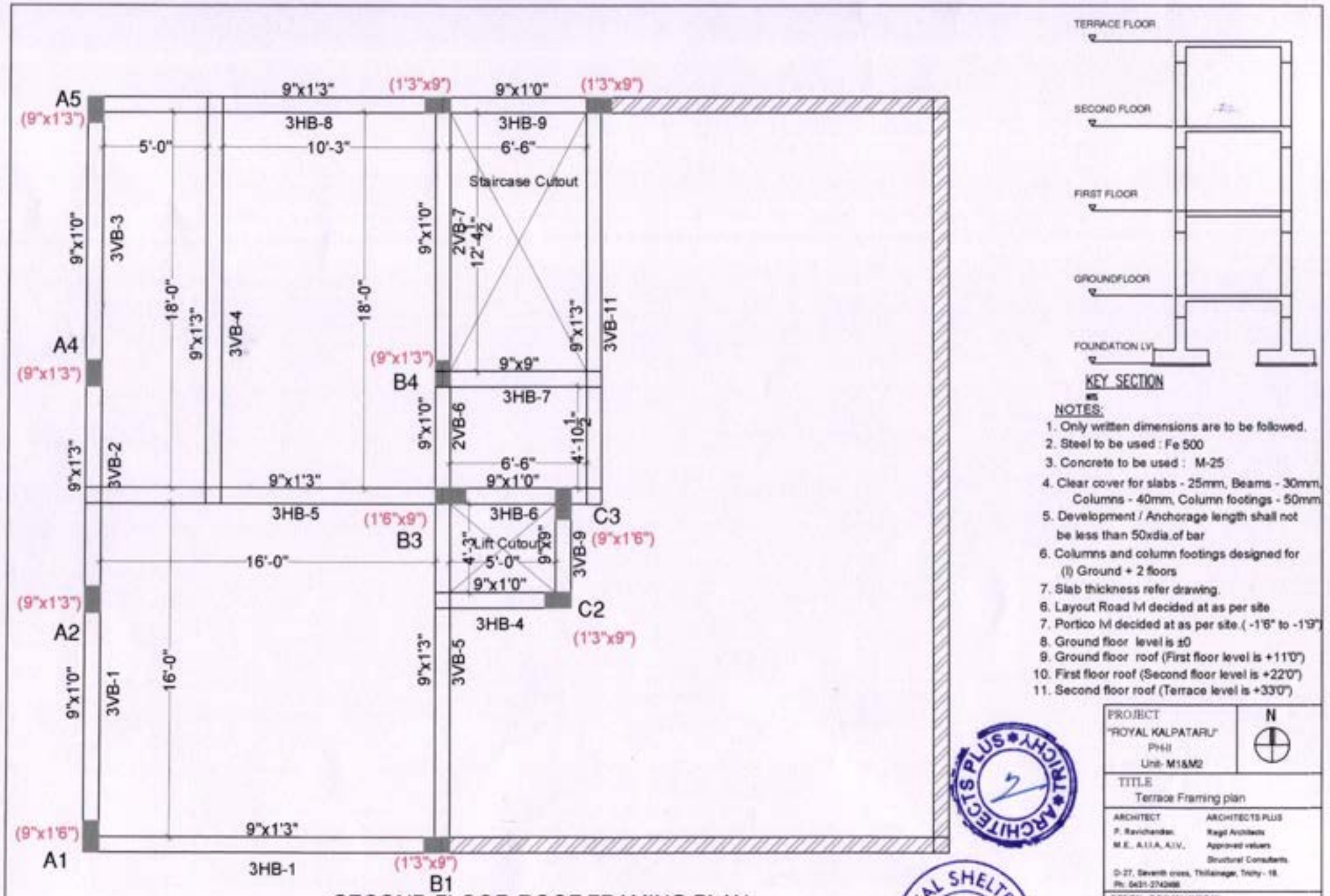
Beams will be designed for the results of critical load combination as per IS: 456-2000 using Staad Pro/in-house spread sheet. The design procedure takes in to account all the member forces like axial, shear, torsion and bending and lists out the area of the reinforcement required for all the members. The RC design of Beam design is given in **Annexure E.**

11.4 Design of Suspended floor/Roof Slabs

Slab elements will be designed Manually. Wall load on slab is taken as uniformly distributed over entire area. Based on yield line theory, slab loads are transferred on to supporting beams. The RC design of Slab design is given in **Annexure F.**

P.RAVICHANDRAN,M.E.,A.I.I.A.,A.I.V.,
Regd. Architect / Structural Engineer
CA/98/23109 AM 77839/5
SE/Gr.1/DTCP/TRICHY/JULY-2024/27
"ARCHITECTS PLUS", D-27, 2nd Floor
J.P. Tower, 7th Cross (East)
Thillainagar, Trichy-620 018.

For ROYAL SHELTER
Managing Partner
Power Agent



SECOND FLOOR ROOF FRAMING PLAN

TERRACE FRAMING PLAN

KEY SECTION

NOTES:

1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : M-25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm
5. Development / Anchorage length shall not be less than 50xdia.of bar
6. Columns and column footings designed for (I) Ground + 2 floors
7. Slab thickness refer drawing.
6. Layout Road lvl decided at as per site
7. Portico lvl decided at as per site.(-1'6" to -1'9")
8. Ground floor level is ±0
9. Ground floor roof (First floor level is +11'0")
10. First floor roof (Second floor level is +22'0")
11. Second floor roof (Terrace level is +33'0")

PROJECT
"ROYAL KALPATARU"
PHII
Unit- M1&M2

N

TITLE
Terrace Framing plan

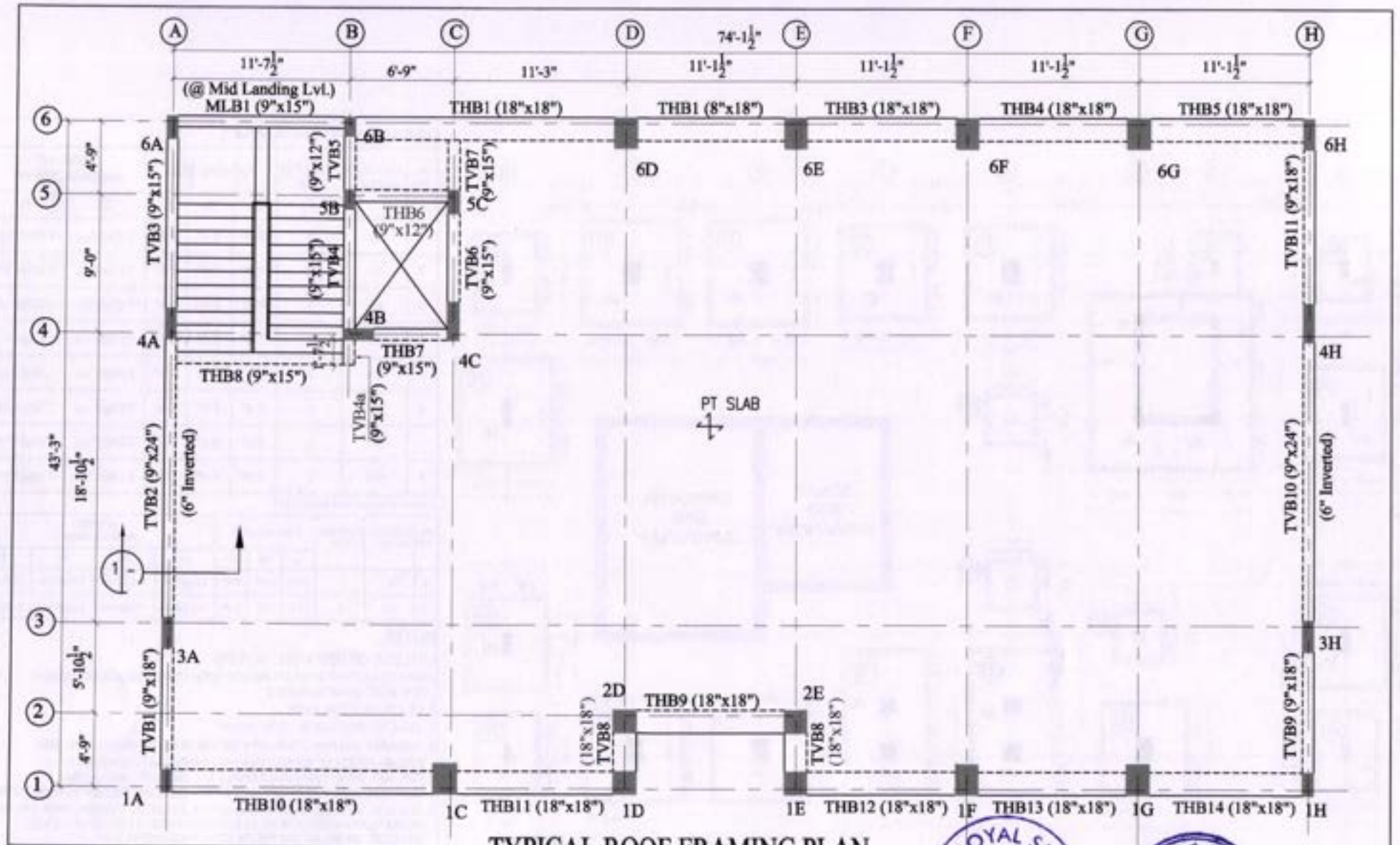
ARCHITECT
P. Ravichandran,
M.E., A.I.I.A, A.I.V.,

ARCHITECTS PLUS
Regd Architects
Approved valuers
Structural Consultants
D-27, Seventh cross, Thillainagar, Trichy - 18.
Ph: 0431-2742466

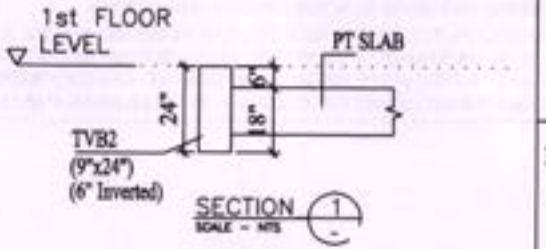
DESIGN : P.RAVICHANDRAN
DRAWN : S.KALARANI
SCALE : FIT TO A2
DWG NO : Str 02
DATE : 20.03.2026

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18



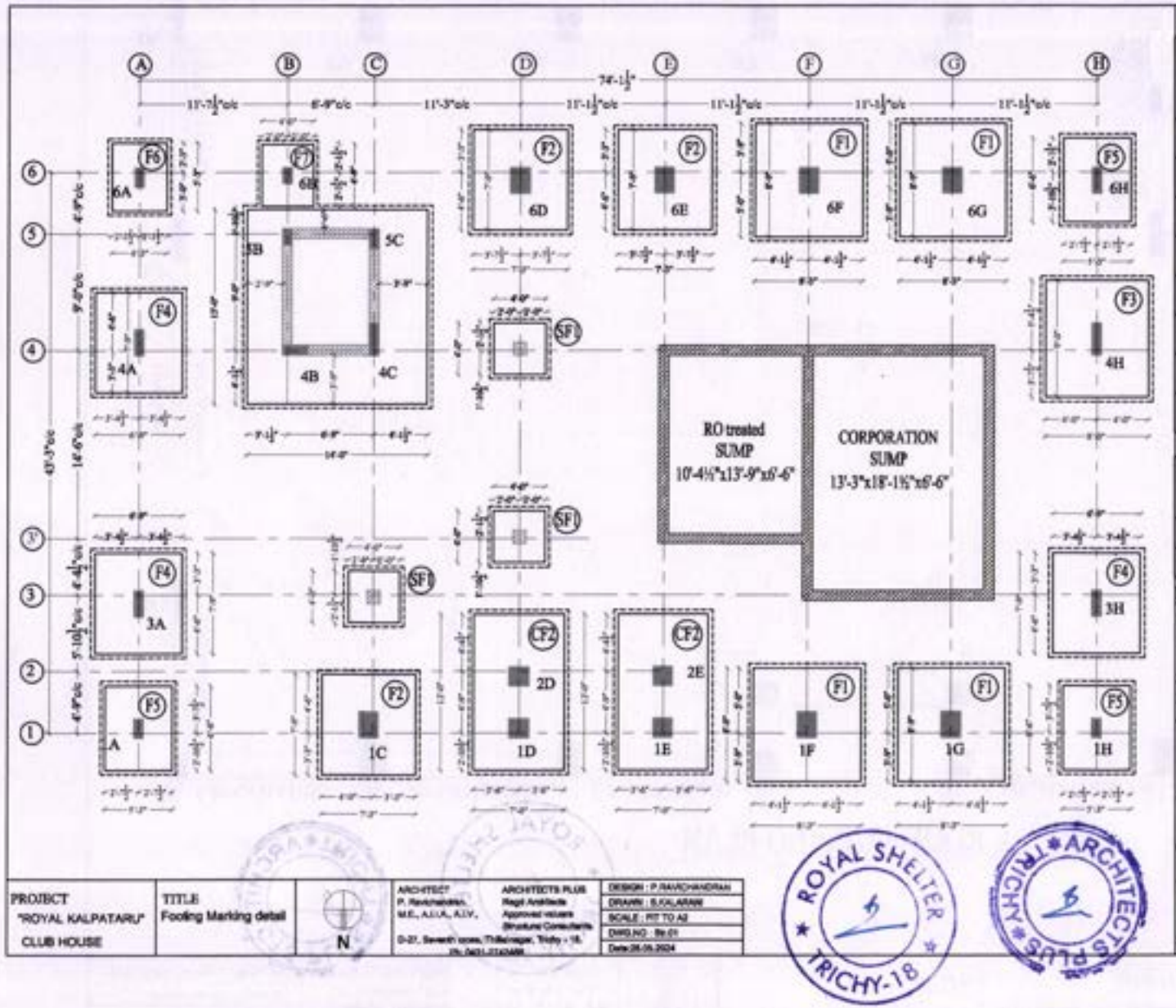
TYPICAL ROOF FRAMING PLAN



PROJECT "ROYAL KALPATARU" CLUB HOUSE	TITLE Typical roof Framing plan	N	ARCHITECT P. Ravichandran. M.E., A.I.I.A., A.I.V., ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants. D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742466	DESIGN : P.RAVICHANDRAN DRAWN : S.KALARANI SCALE : FIT TO A2 DWG.NO : Str.01 Date:26.08.2024

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY



ISOLATED FOOTING SCHEDULE

SL. NO	FOOTING MARK	FOOTING NOS	FOOTING SIZE			FOOTING REINFORCEMENT		
			Lr	Br	D	B1	B2	SB
1	F1	4	8'-9"	8'-3"	2'-3"	T12@5"c/c	T12@5"c/c	2T10
2	F2	3	7'-9"	7'-3"	2'-0"	T12@6"c/c	T12@6"c/c	2T10
3	F3	1	9'-0"	8'-0"	2'-6"	T12@5"c/c	T12@5"c/c	3T10
4	F4	3	7'-9"	6'-9"	2'-0"	T12@6"c/c	T12@6"c/c	2T10
5	F5	3	6'-6"	5'-3"	1'-6"	T10@5"c/c	T10@5"c/c	1T10
6	F6	1	5'-3"	4'-3"	1'-4"	T10@6"c/c	T10@6"c/c	1T10
7	F7	1	4'-9"	4'-0"	1'-2"	T10@7"c/c	T10@7"c/c	-
8	SF1	3	4'-0"	4'-0"	1'-0"	T10@8"c/c	T10@8"c/c	-

COMBINED FOOTING SCHEDULE

SL. NO	FOOTING MARK	FOOTING NOS	FOOTING SIZE			FOOTING REINFORCEMENT				
			Lr	Br	D	B1	B2	B1	B2	SB
1	CF1	1	15'-0"	14'-0"	2'-6"	T12@4"c/c	T12@4"c/c	T10@6"c/c	T10@6"c/c	3T10
2	CF2	2	12'-0"	7'-0"	2'-0"	T12@6"c/c	T12@6"c/c	T10@6"c/c	T10@6"c/c	3T10

NOTES:

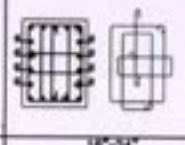
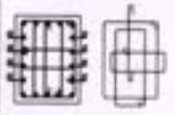
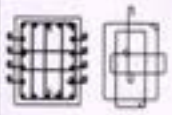
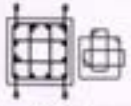
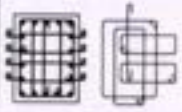
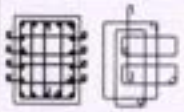
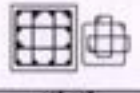
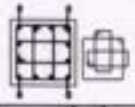
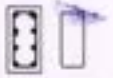
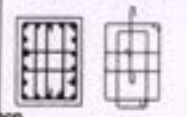
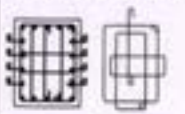
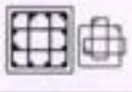
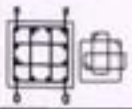
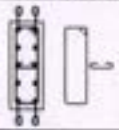
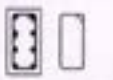
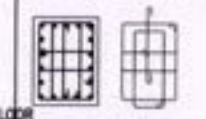
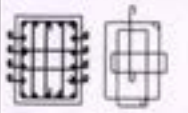
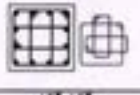
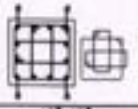
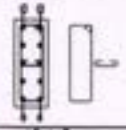
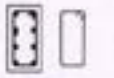
UNLESS OTHERWISE NOTED

1. GRADE OF CONCRETE TO BE M30 WITH CEMENTETIOUS CONTENT NOT LESS THAN 380 kg/m^3.
2. GRADE OF STEEL Fe500
3. ALL COLUMN SIZE IS TO BE 24"x24"
4. THE SAFE BEARING CAPACITY OF THE SOIL CONSIDERED IN THIS DESIGN 310 KN/M^2 AS PER THE RECOMMENDATION GIVEN IN THE SOIL INVESTIGATION REPORT NO : GEO – G – 061– 2020-21 DATED 08.10.2020-13.10.2020 AT DEPTH ABOUT 9'-6" MEASURED FROM NGL.
5. THE SOIL NATURE AT BEARING LAYER SHALL BE VERIFIED FOR EVERY FOOTING. IN CASE LOOSE SOIL/POCKETS ENCOUNTERED AT BEARING LEVEL SHALL BE BROUGHT TO THE DESIGN ENGINEER NOTICE.
6. THE BEARING LAYER SHALL BE PROTECTED BY LAYING PCC IMMEDIATELY AFTER REACHING THE FOUNDING DEPTH.
7. THE FOOTING EXCAVATED PIT IS TO BE WET FREE AND THE WATER TABLE IS TO BE MAINTAINED WELL BELOW THE PCC BOTTOM DURING CONCRETING AND UP TO THE TIME OF FOOTING CONCRETE ATTAINS ITS STRENGTH.
8. OVER EXCAVATED FOOTING PITS SHALL BE FILLED USING PLUM CONCRETE.

PROJECT "ROYAL KALPATARU" CLUB HOUSE	TITLE Footing Marking detail	N	ARCHITECT P. Ravichandran, M.E., A.I.I.A, A.I.V., D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742488	ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants DESIGN : P.RAVICHANDRAN DRAWN : S.KALARANI SCALE : FIT TO A2 DWG.NO : Be-01 Date:28-09-2024

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

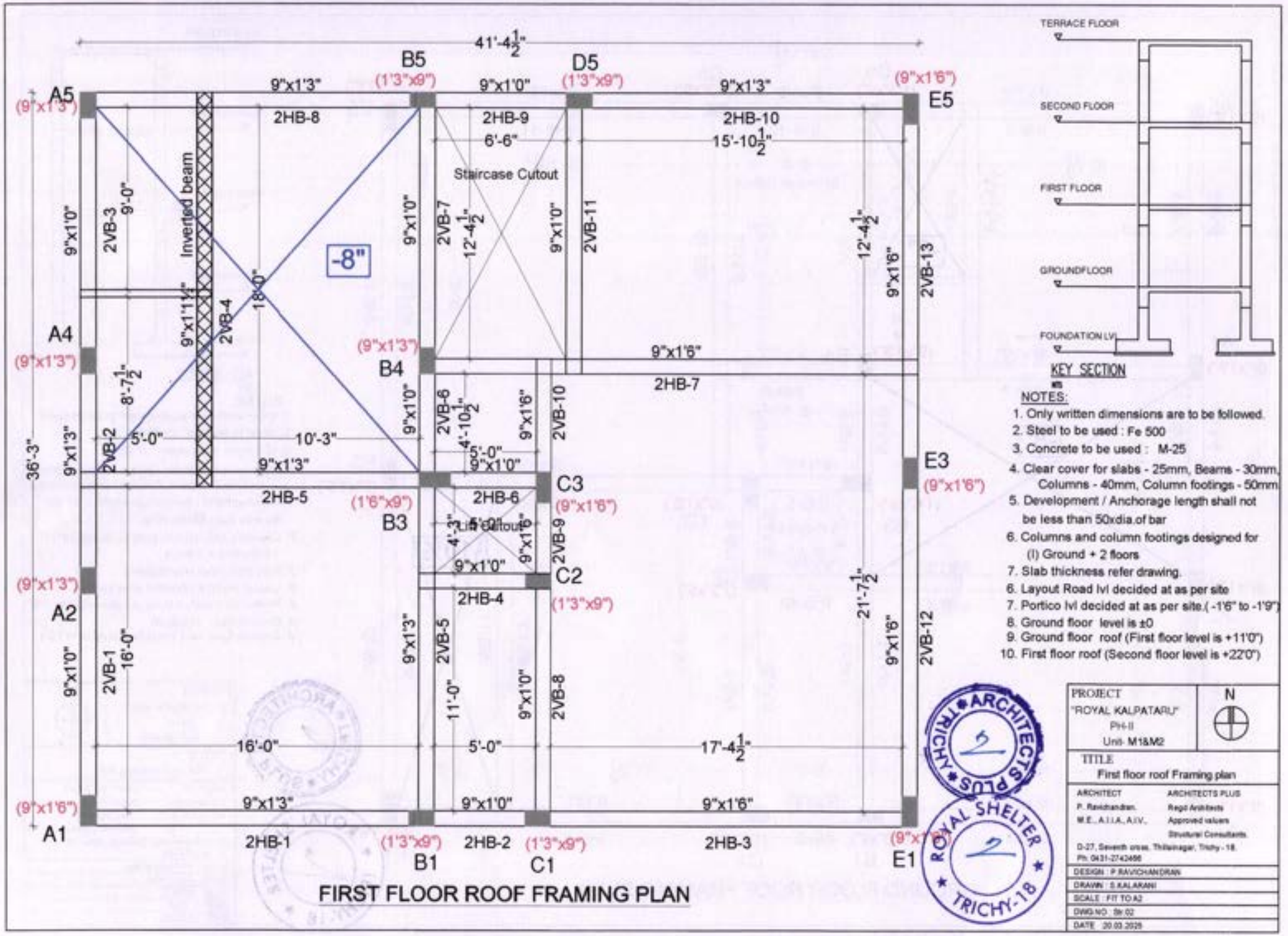
ROOF TO UPPER ROOF								
SIZE	18"x24"				9"x30"	9"x24"	9"x18"	9"x15"
CONCRETE GRADE/COVER	M35				M35	M35	M35	M35
REINFORCEMENT/ STEEL GRADE Fe	10T20+8T16(a) /Fe500				4T25(a)+10T20 /Fe500	4T16(a)+6T12 /Fe500	8T16 /Fe500	8T12 /Fe500
LINKS/TIES/ STEEL GRADE Fe	T8-6"/T8-8"/T8-6"/Fe500				T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500
2nd FLOOR to ROOF								
SIZE	18"x24"	18"x24"		18"x18"	9"x30"	9"x24"	9"x18"	9"x15"
CONCRETE GRADE/COVER	M35	M35		M35	M35	M35	M35	M35
REINFORCEMENT/ STEEL GRADE Fe	10T25+8T20(a) /Fe500	10T25+8T20(a) /Fe500		4T25(a)+8T20 /Fe500	4T25(a)+10T20 /Fe500	4T20(a)+6T16 /Fe500	8T16 /Fe500	8T12 /Fe500
LINKS/TIES/ STEEL GRADE Fe	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500		T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500
FIRST FLOOR to 2nd FLOOR								
SIZE	18"x24"	18"x24"	18"x18"	18"x18"	9"x30"	9"x24"	9"x18"	9"x15"
CONCRETE GRADE/COVER	M35	M35	M35	M35	M35	M35	M35	M35
REINFORCEMENT/ STEEL GRADE Fe	10T25+8T20(a) /Fe500	10T25+8T20(a) /Fe500	12T20 /Fe500	4T25(a)+8T20 /Fe500	14T25 /Fe500	4T20(a)+6T16 /Fe500	8T16 /Fe500	8T12 /Fe500
LINKS/TIES/ STEEL GRADE Fe	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500
STILT FLOOR to FIRST FLOOR								
SIZE	18"x24"	18"x24"	18"x18"	18"x18"	9"x30"	9"x24"	9"x18"	9"x15"
CONCRETE GRADE/COVER	M35	M35	M35	M35	M35	M35	M35	M35
REINFORCEMENT/ STEEL GRADE Fe	18T25 /Fe500	10T25+8T20(a) /Fe500	12T20 /Fe500	4T25(a)+8T20 /Fe500	14T25 /Fe500	4T20(a)+6T16 /Fe500	8T16 /Fe500	8T12 /Fe500
LINKS/TIES/ STEEL GRADE Fe	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500
FOUNDATION to STILT FLOOR								
SIZE	18"x24"	18"x24"	18"x18"	18"x18"	9"x30"	9"x24"	9"x18"	9"x15"
CONCRETE GRADE/COVER	M35	M35	M35	M35	M35	M35	M35	M35
REINFORCEMENT/ STEEL GRADE Fe	18T25 /Fe500	10T25+8T20(a) /Fe500	12T20 /Fe500	4T25(a)+8T20 /Fe500	14T25 /Fe500	4T20(a)+6T16 /Fe500	8T16 /Fe500	4T16(a)+4T12 /Fe500
LINKS/TIES/ STEEL GRADE Fe	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500	T8-6"/T8-8"/T8-6"/Fe500
COLUMN MARK	1F,1G,6F & 6G	1C,6D & 6E	1D & 1E	2D & 2E	4C & 4H	3A,3H,4A,4B & 6H	1A,1H,5C & 6A	5B & 6B
NOS OF COLUMN	04	03	02	02	02	06	04	02

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

PROJECT "ROYAL KALPATARU" CLUB HOUSE	TITLE Column Reinforcement	N	ARCHITECT P. Ravishandran. M.E., A.I.I.A., A.I.V. D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742466 ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants.

DESIGN : P.RAVICHANDRAN	
DRAWN : S.KALARANI	
SCALE : FIT TO A2	
DWG.NO : Str.01	
Date 26.08.2024	



FIRST FLOOR ROOF FRAMING PLAN

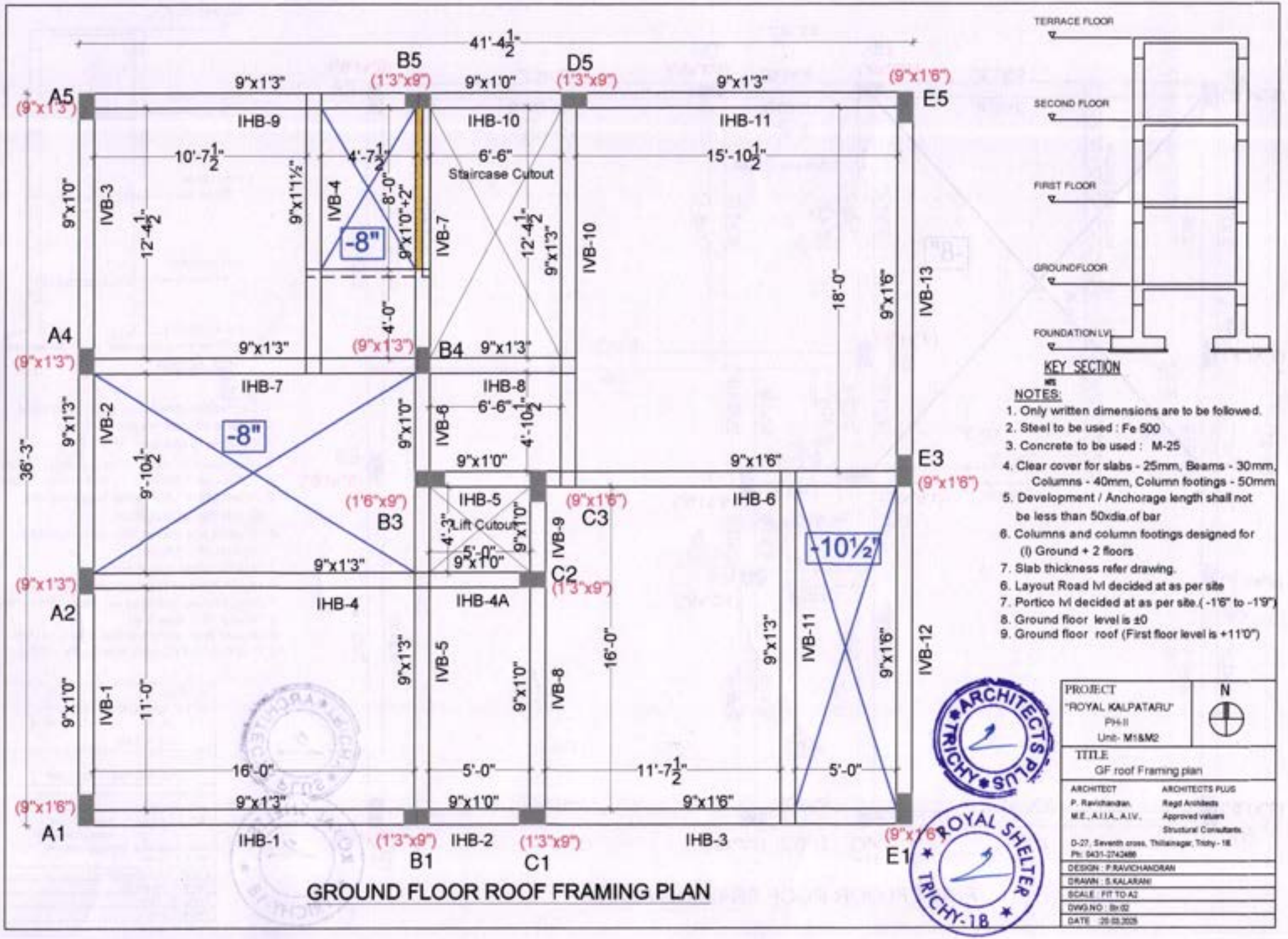
NOTES:

1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : M-25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
5. Development / Anchorage length shall not be less than 50xdia.of bar
6. Columns and column footings designed for (I) Ground + 2 floors
7. Slab thickness refer drawing.
6. Layout Road lvl decided at as per site
7. Portico lvl decided at as per site.(-1'6" to -1'9")
8. Ground floor level is ±0
9. Ground floor roof (First floor level is +11'0")
10. First floor roof (Second floor level is +22'0")

PROJECT "ROYAL KALPATARU" PH-II Unit- M1&M2	N
TITLE First floor roof Framing plan	
ARCHITECT P. Ravichandran, M.E., A.I.I.A., A.I.V., D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742486	ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants
DESIGN : P.RAVICHANDRAN	
DRAWN : S.KALARANI	
SCALE : FIT TO A2	
DWG NO : Str 02	
DATE : 20.03.2025	

ARCHITECTS PLUS TRICHY 2

ROYAL SHELTER TRICHY-18 2



GROUND FLOOR ROOF FRAMING PLAN

KEY SECTION

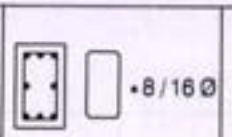
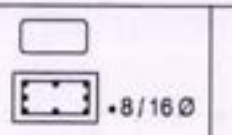
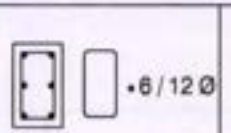
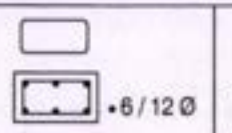
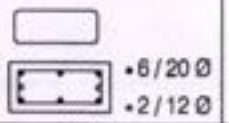
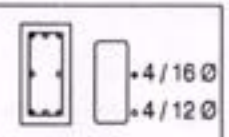
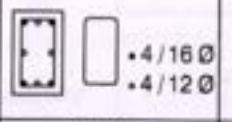
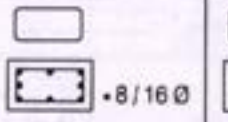
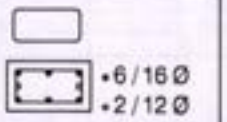
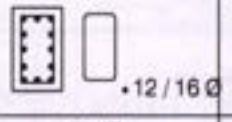
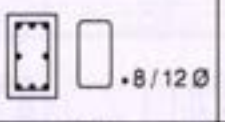
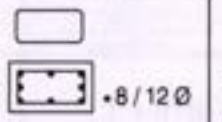
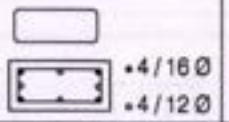
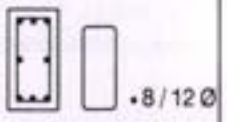
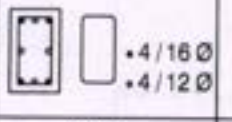
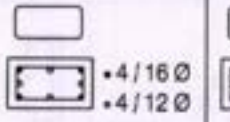
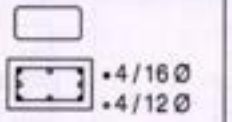
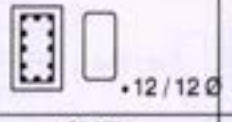
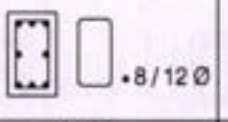
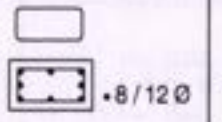
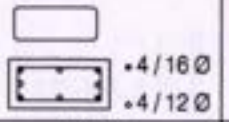
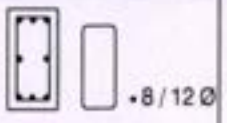
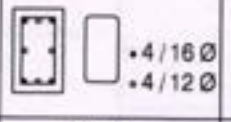
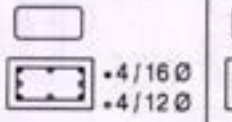
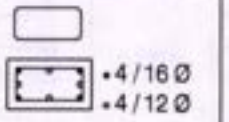
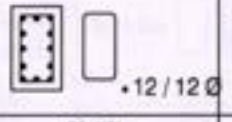
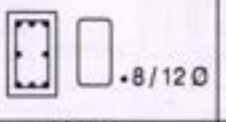
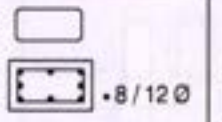
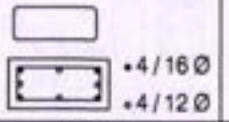
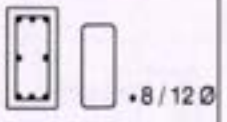
NOTES:

1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : M-25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm
5. Development / Anchorage length shall not be less than 50xdia.of bar
6. Columns and column footings designed for (i) Ground + 2 floors
7. Slab thickness refer drawing.
6. Layout Road lvl decided at as per site
7. Portico lvl decided at as per site.(-1'6" to -1'9")
8. Ground floor level is ±0
9. Ground floor roof (First floor level is +11'0")

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

PROJECT "ROYAL KALPATARU" PH-II Unit- M1&M2	N
TITLE GF roof Framing plan	
ARCHITECT P. Ravichandran, M.E., A.I.I.A., A.I.V.,	ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants D-27, Seventh cross, Thillainagar, Trichy - 18 Ph: 0431-2742486
DESIGN : P.RAVICHANDRAN	
DRAWN : S.KALAIRANI	
SCALE : FIT TO A2	
DWG.NO : Str.02	
DATE : 20.03.2025	

2nd FLOOR to TERRACE FLOOR	 8/16Ø	 8/16Ø			 6/12Ø	 6/12Ø	 6/20Ø 2/12Ø	 4/16Ø 4/12Ø
SIZE	9"x1'3"	1'3"x9"			9"x1'3"	1'3"x9"	1'6"x9"	9"x1'6"
CONCRETE GRADE/COVER		M30			M30	M30	M30	M30
STEEL GRADE Fe		Fe500			Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe		T8-7"/Fe500			T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
1st FLOOR to 2nd FLOOR	 4/16Ø 4/12Ø	 8/16Ø	 6/16Ø 2/12Ø	 12/16Ø	 8/12Ø	 8/12Ø	 4/16Ø 4/12Ø	 8/12Ø
SIZE	9"x1'3"	1'3"x9"	1'3"x9"	9"x1'3"	9"x1'3"	1'3"x9"	1'6"x9"	9"x1'6"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
GROUND FLOOR to 1st FLOOR	 4/16Ø 4/12Ø	 4/16Ø 4/12Ø	 4/16Ø 4/12Ø	 12/12Ø	 8/12Ø	 8/12Ø	 4/16Ø 4/12Ø	 8/12Ø
SIZE	9"x1'3"	1'3"x9"	1'3"x9"	9"x1'3"	9"x1'3"	1'3"x9"	1'6"x9"	9"x1'6"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
PLINTH TO GROUND FLOOR	 4/16Ø 4/12Ø	 4/16Ø 4/12Ø	 4/16Ø 4/12Ø	 12/12Ø	 8/12Ø	 8/12Ø	 4/16Ø 4/12Ø	 8/12Ø
SIZE	9"x1'3"	1'3"x9"	1'3"x9"	9"x1'3"	9"x1'3"	1'3"x9"	1'6"x9"	9"x1'6"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
COLUMN MARK	A1	B1	C1	E1	A2	C2	B3	C3
NOS OF COLUMN	01	01	01	01	01	01	01	01

NOTES:

1. Only written dimensions are to be followed.
2. All Dimension are in Feet & Inches.
3. Steel to be used : Fe 500
4. Concrete to be used : M-30
5. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
6. Development / Anchorage length shall not be less than 50xdia.of bar
7. Columns and column footings designed for (I) Ground+2 floors
8. Safe bearing capacity of soil : 250KN/m²
9. Center point of each footing should coinside with center point of corresponding column.

ROYAL SHELTER TRICHY-18

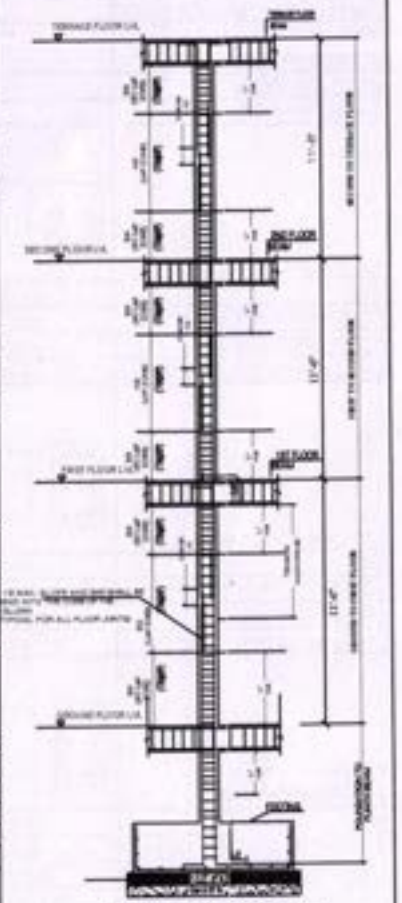
ARCHITECTS PLUS TRICHY

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Project	Title	N	ARCHITECT: P. Ravichandran, M.E., A.I.I.A., A.I.V.
"ROYAL KALPATARU" PLOT- M1 & M2	Column Chart		ARCHITECTS PLUS: Regd Architects, Approved valuers, Structural Consultants. D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742466

Design	P.Ravichandran
Drawn	S.Kalarani
Dwg no	Str 02
Scale	Fit to Paper
Date	24.03.2020

2nd FLOOR to TERRACE FLOOR	——	•6/12Ø	•4/16Ø •4/12Ø	•8/20Ø	•4/20Ø •4/16Ø	•4/20Ø •4/16Ø	——
SIZE		9"x1'3"	9"x1'3"	9"x1'3"	1'3"x9"	1'3"x9"	
CONCRETE GRADE/COVER		M30	M30	M30	M30	M30	
STEEL GRADE Fe		Fe500	Fe500	Fe500	Fe500	Fe500	
LINKS/TIES/STEEL GRADE Fe		T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	
1st FLOOR to 2nd FLOOR	•4/20Ø •4/12Ø	•8/12Ø	•8/12Ø	•8/16Ø	•4/16Ø •4/12Ø	•4/20Ø •4/16Ø	•10/20Ø
SIZE	9"x1'3"	9"x1'3"	9"x1'3"	9"x1'3"	1'3"x9"	1'3"x9"	9"x1'6"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
GROUND FLOOR to 1st FLOOR	•6/20Ø •2/12Ø	•8/12Ø	•8/12Ø	•8/16Ø	•8/12Ø	•4/16Ø •4/12Ø	•10/16Ø
SIZE	9"x1'3"	9"x1'3"	9"x1'3"	9"x1'3"	1'3"x9"	1'3"x9"	9"x1'6"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
PLINTH TO GROUND FLOOR	•6/20Ø •2/12Ø	•8/12Ø	•8/12Ø	•8/16Ø	•8/12Ø	•4/16Ø •4/12Ø	•10/16Ø
SIZE	9"x1'3"	9"x1'3"	9"x1'3"	9"x1'3"	1'3"x9"	1'3"x9"	9"x1'6"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
COLUMN MARK	E3	A4	B4	A5	B5	D5	E5
NOS.OF.COLUMN	01	01	01	01	01	01	01



TYPICAL ELEVATION SHOWING RC COLUMN ROOF SPLICING DETAILS

NOTES

1. Only written dimensions are to be followed.
2. All Dimension are in Feet & Inches.
3. Steel to be used : Fe 500
4. Concrete to be used : M-30
5. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
6. Development / Anchorage length shall not be less than 50xdia.of'bar
7. Columns and column footings designed for (I) Ground+2 floors
8. Safe bearing capacity of soil :25KN/m²
9. Center point of each footing should coinside with center point of corresponding column.

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

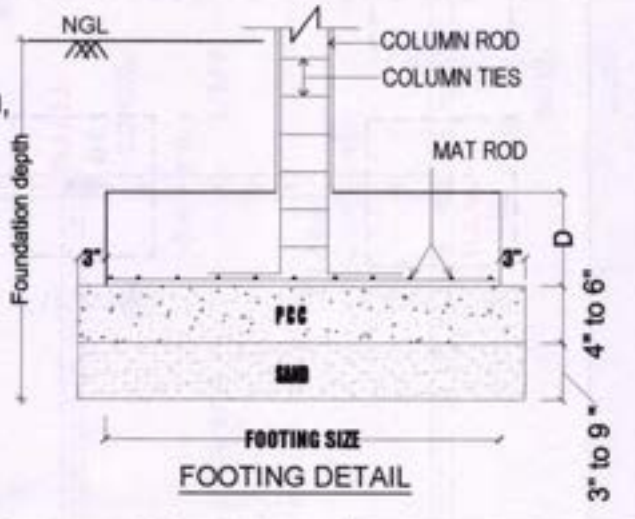
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Project "ROYAL KALPATARU" PLOT- M1 & M2	Title Column Chart	N	ARCHITECT P. Ravichandran. M.E., A.I.I.A., A.I.V. ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742486	Design : P.Ravichandran Drawn : S.Kalaiarsi Dwg.no : Str.02 Scale : Fit to Paper Date : 24.03.2025

SL.NO/ TYPE	COLUMNS	NOS.	PIT SIZE	FOOTING SIZE	FOOTING DEPTH D2 Over all depth	MAT ROD
1.	C1,E1,C2	3	4'6"x4'6"	4'0"x4'0"	1'6"	12 Ø 7" C/C bothways
2.	A1,E5	2	4'9"x4'9"	4'3"x4'3"	1'6"	12 Ø 7" C/C bothways
3.	B1,A2,A4,A5	4	5'3"x5'3"	4'9"x4'9"	1'9"	12 Ø 7" C/C bothways
4.	C3,B4,D5	3	5'6"x5'6"	5'0"x5'0"	1'9"	12 Ø 7" C/C bothways
5.	E3,B5	2	5'9"x5'9"	5'3"x5'3"	1'9"	12 Ø 7" C/C bothways
6.	B3	1	6'3"x6'3"	5'9"x5'9"	2'0"	12 Ø 7" C/C bothways
	TOTAL	16 nos.				

NOTES:

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3. Steel to be used : Fe 500
4. Concrete to be used : M-30
5. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
6. Development / Anchorage length shall not be less than 50xdia.of bar
7. Columns and column footings designed for
   (I) Ground + 2 floors
8. Safe bearing capacity of soil : 250KN/m²
9. Center point of each footing should coinside with center point of corresponding column.

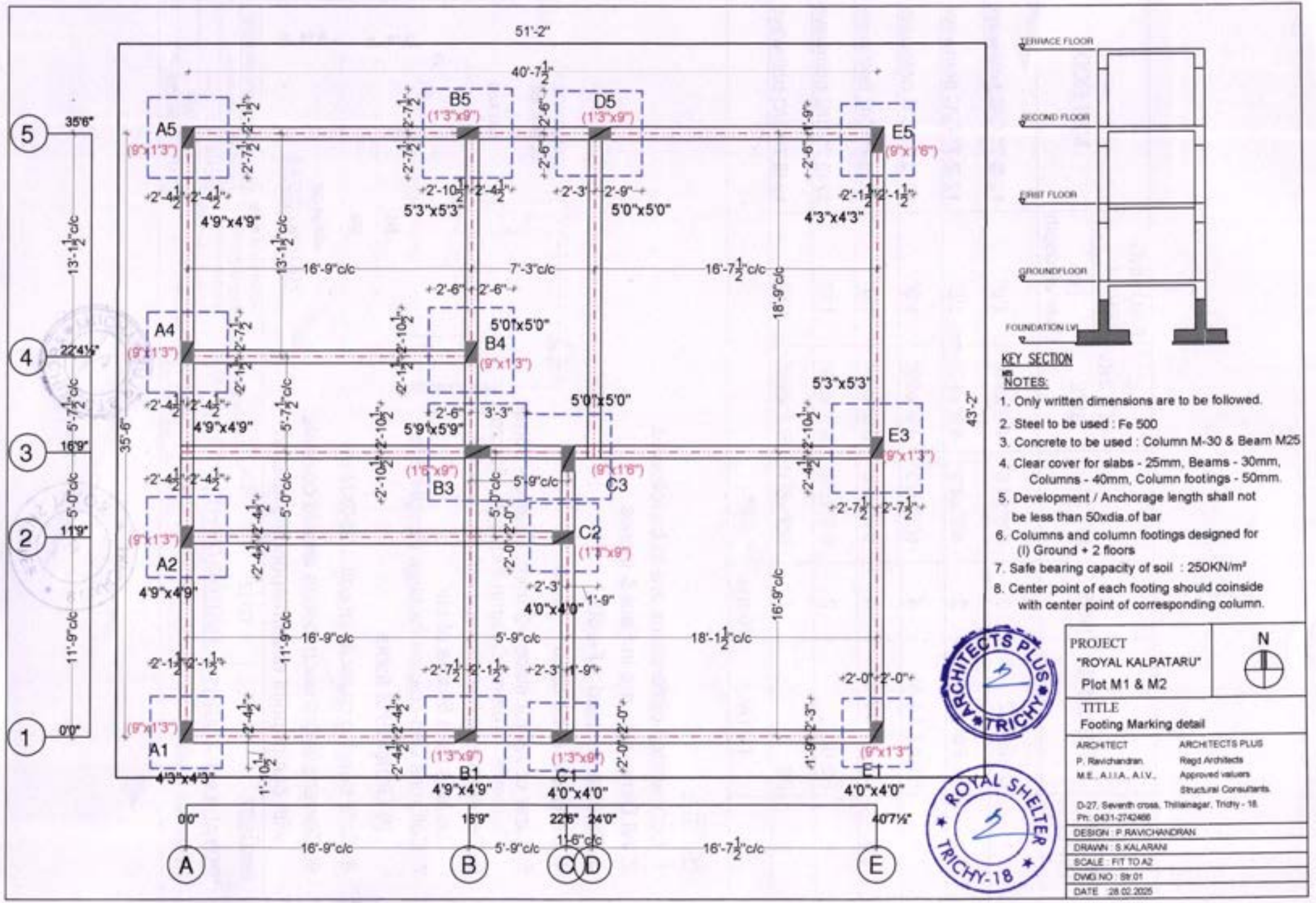


FOOTING DETAIL

PROJECT	TITLE	ARCHITECT	ARCHITECTS PLUS	
"ROYAL KALPATARU" PLOT-M1 & M2	FOOTING CHART	P. Ravichandran. M.E., A.I.I.A., A.I.V.	Regd Architects Approved valuers Structural Consultants.	DESIGN : P.RAVICHANDRAN
				DRAWN : S.KALARANI
				SCALE : FIT TO A4
		D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742466		DWG NO: Str.03
				DATE : 26.03.2025

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY



KEY SECTION

NOTES:

1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : Column M-30 & Beam M25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
5. Development / Anchorage length shall not be less than 50xdia.of bar
6. Columns and column footings designed for (I) Ground + 2 floors
7. Safe bearing capacity of soil : 250KN/m²
8. Center point of each footing should coinside with center point of corresponding column.

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

PROJECT "ROYAL KALPATARU" Plot M1 & M2	N
TITLE Footing Marking detail	

ARCHITECT
P. Ravichandran.
M.E., A.I.I.A., A.I.V.,

ARCHITECTS PLUS
Regd Architects
Approved valuers
Structural Consultants.
D-27, Seventh cross, Thillainagar, Trichy - 18.
Ph: 0431-2742466

DESIGN	P.RAVICHANDRAN
DRAWN	S.KALARANI
SCALE	FIT TO A2
DWG NO	St-01
DATE	28.02.2025

**********END OF COLUMN DESIGN RESULTS**********

169. DESIGN BEAM 16 18 19 21 TO 32 34 TO 36 39 TO 49 1015 TO 1052 1054 TO 1057 -
170. 1059 TO 1072 1074 TO 1081 1083 1084 1103 1105 1106 1108 TO 1112 1114 1115 -
171. 1118 TO 1126 1128 TO 1141

B E A M N O. 16 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 5510.0 mm SIZE: 230.0 mm X 530.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	7.42	0.77	8
	0.00	-6.49	0.77	8			
459.2	0.00	0.00	0.00	8	6.10	0.77	8
	0.00	-3.39	0.77	8			
918.3	0.00	0.00	0.00	8	4.78	0.77	8
	0.00	-0.89	0.77	8			
1377.5	0.00	1.00	0.77	8	3.46	0.77	8
	0.00	0.00	0.00	8			
1836.7	0.00	2.28	0.77	8	2.14	0.77	8
	0.00	0.00	0.00	8			
2295.8	0.00	2.97	0.77	8	0.82	0.77	8
	0.00	0.00	0.00	8			
2755.0	0.00	3.04	0.77	8	-0.50	0.77	8
	0.00	0.00	0.00	8			
3214.2	0.00	2.51	0.77	8	-1.81	0.77	8
	0.00	0.00	0.00	8			
3673.3	0.00	1.38	0.77	8	-3.13	0.77	8
	0.00	0.00	0.00	8			
4132.5	0.00	0.00	0.00	8	-4.45	0.77	8
	0.00	-0.37	0.77	8			
4591.7	0.00	0.00	0.00	8	-5.77	0.77	8
	0.00	-2.71	0.77	8			
5050.8	0.00	0.00	0.00	8	-7.09	0.77	8
	0.00	-5.67	0.77	8			
5510.0	0.00	0.00	0.00	8	-8.41	0.77	8
	0.00	-9.22	0.77	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	207.23/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 160 mm
459.2	207.23/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 160 mm
918.3	193.15/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm

1836.7	0.00/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
2295.8	0.00/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
2755.0	0.00/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
3214.2	0.00/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
3673.3	193.15/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
4132.5	193.15/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
4591.7	207.23/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 160 mm
5050.8	207.23/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 160 mm
5510.0	207.23/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 160 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 684.0 mm AWAY FROM START SUPPORT
VY = 5.46 MX = 0.77 LD= 8
Provide 2 Legged 8i @ 160 mm c/c

SHEAR DESIGN RESULTS AT 609.0 mm AWAY FROM END SUPPORT
VY = -6.67 MX = 0.77 LD= 8
Provide 2 Legged 8i @ 160 mm c/c

B E A M N O. 18 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 5530.0 mm SIZE: 230.0 mm X 530.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	8.57	-0.47	8
	0.00	-8.21	-0.47	8			
460.8	0.00	-4.56	-0.47	8	7.25	-0.47	8
	0.00	0.00	0.00	8			
921.7	0.00	-1.53	-0.47	8	5.92	-0.47	8
	0.00	0.00	0.00	8			
1382.5	0.00	0.90	-0.47	8	4.60	-0.47	8
	0.00	0.00	0.00	8			
1843.3	0.00	2.71	-0.47	8	3.28	-0.47	8
	0.00	0.00	0.00	8			
2304.2	0.00	3.92	-0.47	8	1.95	-0.47	8
	0.00	0.00	0.00	8			
2765.0	0.00	4.51	-0.47	8	0.63	-0.47	8
	0.00	0.00	0.00	8			
3225.8	0.00	4.50	-0.47	8	-0.69	-0.47	8
	0.00	0.00	0.00	8			
3686.7	0.00	3.87	-0.47	8	-2.02	-0.47	8
	0.00	0.00	0.00	8			
4147.5	0.00	2.64	-0.47	8	-3.34	-0.47	8
	0.00	0.00	0.00	8			
4608.3	0.00	0.79	-0.47	8	-4.67	-0.47	8
	0.00	0.00	0.00	8			

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

Check Two way Shear

Vu_2 = $380*(2.625^2 - 1.22^2)$ = 2059 N

tvz = $2059*10^3/2.625*1220*620$ = 1.0 N/mm²

ks = 1 N/mm²

ks =1 > tvz = 1.00 Hence safe

Result

Footing size = 2625mm x 2475mm

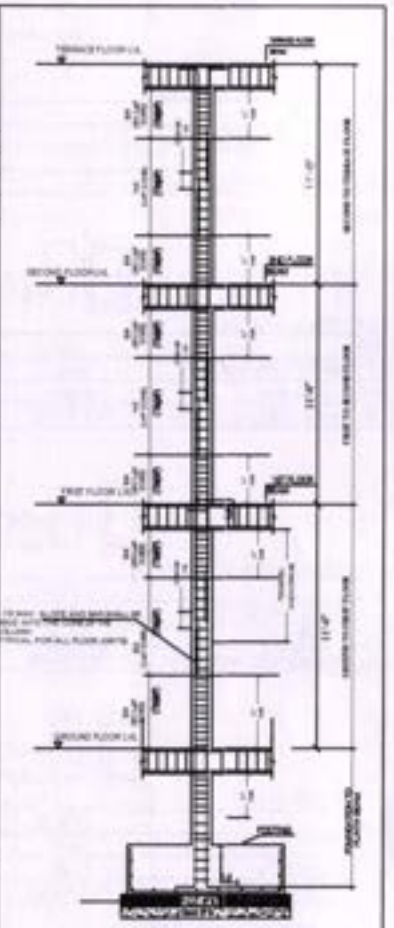
Footing Depth = 675mm

Reinforcement = T12@125mm c/c

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

2nd FLOOR to TERRACE FLOOR	•8/16Ø	———	•8/12Ø	•4/20Ø •4/16Ø	•4/20Ø •4/16Ø	•4/16Ø •4/12Ø	•8/16Ø	
SIZE	9"x1'3"		9"x1'6"	9"x1'0"	9"x1'6"	1'3"x9"	1'3"x9"	
CONCRETE GRADE/COVER	M30		M30	M30	M30	M30	M30	
STEEL GRADE Fe	Fe500		Fe500	Fe500	Fe500	Fe500	Fe500	
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe600		T8-7"/Fe600	T8-7"/Fe600	T8-7"/Fe600	T8-7"/Fe600	T8-7"/Fe500	
1st FLOOR to 2nd FLOOR	•8/16Ø	•8/12Ø	•8/12Ø	•4/16Ø •4/12Ø	•8/16Ø	•8/12Ø	•8/16Ø	
SIZE	9"x1'3"	9"x1'6"	9"x1'6"	9"x1'0"	9"x1'6"	1'3"x9"	1'3"x9"	
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30	
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe600	T8-7"/Fe600	T8-7"/Fe600	T8-7"/Fe600	T8-7"/Fe600	T8-7"/Fe600	T8-7"/Fe600	
GROUND FLOOR to 1st FLOOR	•8/16Ø	•8/12Ø	•8/12Ø	•8/12Ø	•4/16Ø •4/12Ø	•8/12Ø	•8/16Ø	
SIZE	9"x1'3"	9"x1'6"	9"x1'6"	9"x1'0"	9"x1'6"	1'3"x9"	1'3"x9"	
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30	
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe600	T8-7"/Fe600	T8-7"/Fe600	T8-7"/Fe600	T8-7"/Fe600	T8-7"/Fe600	T8-7"/Fe600	
PLINTH TO GROUND FLOOR	•8/16Ø	•8/12Ø	•8/12Ø	•8/12Ø	•4/16Ø •4/12Ø	•8/12Ø	•8/16Ø	
SIZE	9"x1'3"	9"x1'6"	9"x1'6"	9"x1'0"	9"x1'6"	1'3"x9"	1'3"x9"	
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30	
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe600	T8-7"/Fe600	T8-7"/Fe600	T8-7"/Fe600	T8-7"/Fe600	T8-7"/Fe600	T8-7"/Fe600	
COLUMN MARK	A5	C5	E5	E6	A7	C7	E7	
NOS.OF.COLUMN	01	01	01	01	01	01	01	



TYPICAL ELEVATION SHOWING RC COLUMN RODS SPLICING DETAILS

NOTES

1. Only written dimensions are to be followed.
2. All Dimension are in Feet & Inches.
3. Steel to be used : Fe 500
4. Concrete to be used : M-25
5. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
6. Development / Anchorage length shall not be less than 50xdia of bar
7. Columns and column footings designed for (1) Ground+2 floors
8. Safe bearing capacity of soil : 250KN/m²
9. Center point of each footing should coinside with center point of corresponding column

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

Sheet: 2/2

Project "ROYAL KALPATARU" PLOT- J1	Title Column Chart	N	ARCHITECT P. Ravichandran. M.E., A.I.I.A., A.I.V. D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742468 ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants

Design	P.Ravichandran
Drawn	S.Kalarani
Dwg.no	St/.02
Scale	Fit to Paper
Date	24.03.2025

2nd FLOOR to TERRACE FLOOR	———	———	———	8-12Ø	6-12Ø	8-16Ø	4-20Ø 2-16Ø 2-12Ø	———	———
SIZE				9"x1'3"	9"x1'0"	9"x1'6"	9"x1'3"		
CONCRETE GRADE/COVER				M30	M30	M30	M30		
STEEL GRADE Fe				Fe500	Fe500	Fe500	Fe500		
LINKS/TIES/STEEL GRADE Fe				T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500		
1st FLOOR to 2nd FLOOR	8-12Ø	8-12Ø	4-20Ø 2-16Ø 2-12Ø	8-12Ø	6-12Ø	8-16Ø	4-16Ø 4-12Ø	8-12Ø	4-16Ø 4-12Ø
SIZE	9"x1'3"	9"x1'3"	9"x1'3"	9"x1'3"	9"x1'0"	9"x1'6"	9"x1'3"	9"x1'3"	9"x1'6"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
GROUND FLOOR to 1st FLOOR	4-16Ø 4-12Ø	8-12Ø	4-16Ø 4-12Ø	8-12Ø	8-12Ø	8-16Ø	4-16Ø 4-12Ø	8-12Ø	8-12Ø
SIZE	9"x1'3"	9"x1'3"	9"x1'3"	9"x1'3"	9"x1'0"	9"x1'6"	9"x1'3"	9"x1'3"	9"x1'6"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
PLINTH TO GROUND FLOOR	4-16Ø 4-12Ø	8-12Ø	4-16Ø 4-12Ø	8-12Ø	8-12Ø	8-16Ø	4-16Ø 4-12Ø	8-12Ø	8-12Ø
SIZE	9"x1'3"	9"x1'3"	9"x1'3"	9"x1'3"	9"x1'0"	9"x1'6"	9"x1'3"	9"x1'3"	9"x1'6"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
COLUMN MARK	A1	B1	E1	B2	D2	A3	D3	E3	A4
NOS OF COLUMN	01	01	01	01	01	01	01	01	01

NOTES

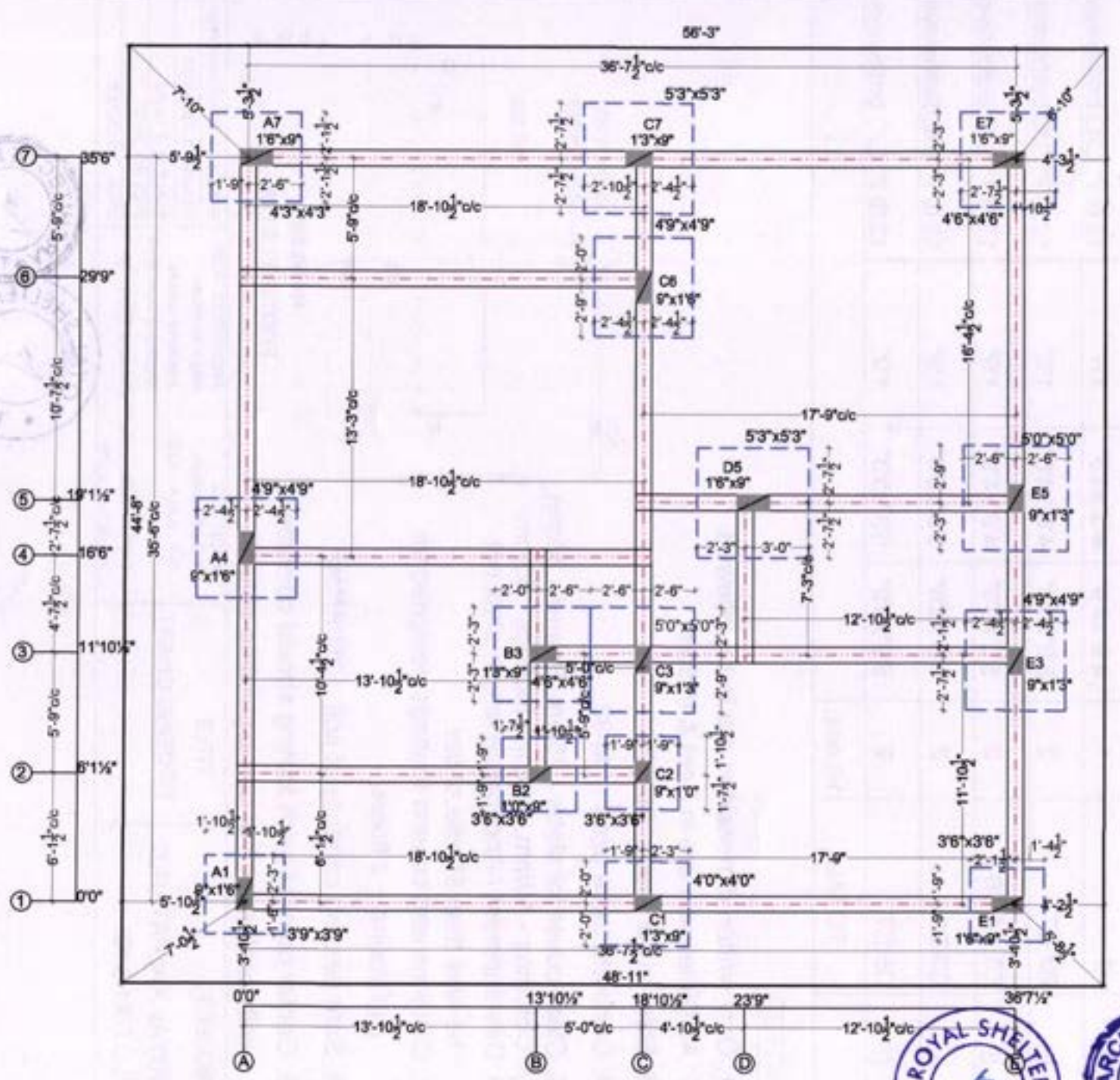
1. Only written dimensions are to be followed.
2. All Dimension are in Feet & Inches.
3. Steel to be used : Fe 500
4. Concrete to be used : M-30
5. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
6. Development / Anchorage length shall not be less than 50dia of bar
7. Columns and column footings designed for (I) Ground+2 floors
8. Safe bearing capacity of soil : 250KN/m²
9. Center point of each footing should coinside with center point of corresponding colu

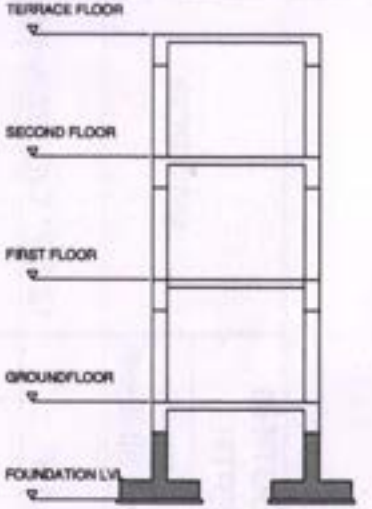
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Project: "ROYAL KALPATARU" PLOT- J1	Title: Column Chart	N	ARCHITECT: P. Ravichandran. M.E., A.I.I.A., A.I.V. — ARCHITECTS PLUS: Regd Architects, Approved valuers, Structural Consultants. D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742466	Design: P.Ravichandran; Drawn: S.Kalairani; Dwg.no: Str.02; Scale: Fit to Paper; Date: 24.03.2005

ROYAL SHELTER ★ TRICHY ★

ARCHITECTS PLUS ★ TRICHY ★





KEY SECTION

NOTES:

1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : Column M-30 & Beam M25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
5. Development / Anchorage length shall not be less than 50xdia.of bar
6. Columns and column footings designed for (I) Ground + 2 floors
7. Safe bearing capacity of soil : 250KN/m²
8. Center point of each footing should coinside with center point of corresponding column.

PROJECT "ROYAL KALPATARU" PH-II Unit- K1&K2	N
TITLE Centerline Marking detail	

ARCHITECT
P. Ravichendran.
M.E., A.I.I.A., A.I.V.,

ARCHITECTS PLUS
Regd Architects
Approved valuers
Structural Consultants.

D-27, Seventh cross, Thillainagar, Trichy - 18.
Ph: 0431-2742468

DESIGN	P.RAVICHANDRAN
DRAWN	S.KALARANI
SCALE	FIT TO A2
DWG.NO	Str.01
DATE	18.03.2025

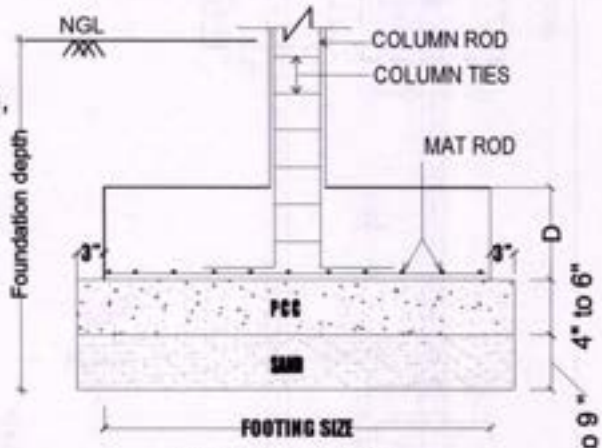
ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

SL.NO/ TYPE	COLUMNS	NOS.	PIT SIZE	FOOTING SIZE	FOOTING DEPTH D2 Over all depth	MAT ROD
1.	E1,B2,C2	3	4'0"x4'0"	3'6"x3'6"	1'3"	12 Ø 7" C/C bothways
2.	A1	1	4'3"x4'3"	3'9"x3'9"	1'3"	12 Ø 7" C/C bothways
3.	C1	1	4'6"x4'6"	4'0"x4'0"	1'3"	12 Ø 7" C/C bothways
4.	A7	1	4'9"x4'9"	4'3"x4'3"	1'6"	12 Ø 7" C/C bothways
5.	B3,E7	2	5'0"x5'0"	4'6"x4'6"	1'6"	12 Ø 7" C/C bothways
6.	E3,A4,C6	3	5'3"x5'3"	4'9"x4'9"	1'9"	12 Ø 7" C/C bothways
7.	C3,E5	2	5'6"x5'6"	5'0"x5'0"	1'9"	12 Ø 7" C/C bothways
8.	D5,C7	2	5'9"x5'9"	5'3"x5'3"	1'9"	12 Ø 7" C/C bothways
	TOTAL	16 nos.				

NOTES:

1. Only written dimensions are to be followed.
2. All Dimension are in Feet & Inches.
3. Steel to be used : Fe 500
4. Concrete to be used : M-30
5. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
6. Development / Anchorage length shall not be less than 50xdia.of bar
7. Columns and column footings designed for
   (I) Ground + 2 floors
8. Safe bearing capacity of soil : 250KN/m²
9. Center point of each footing should coinside with center point of corresponding column.

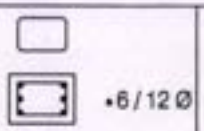
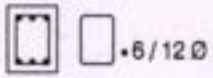
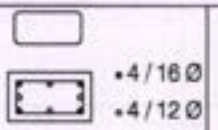
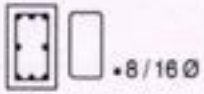
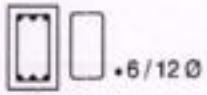
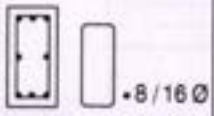
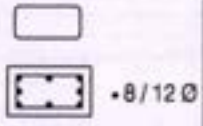
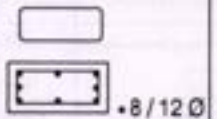
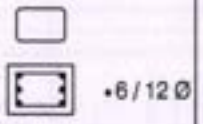
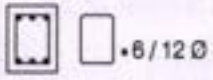
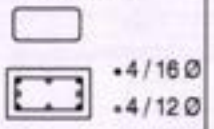
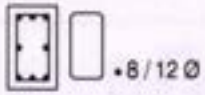
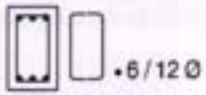
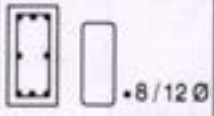
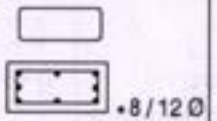
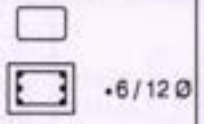
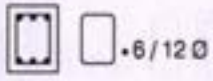
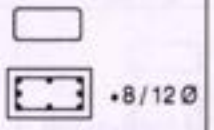
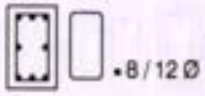
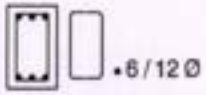
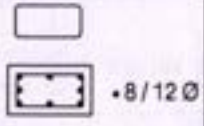
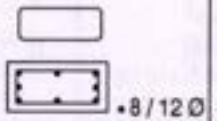
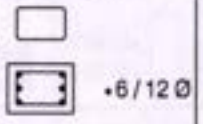
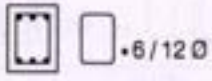
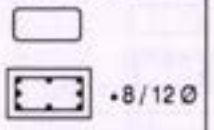
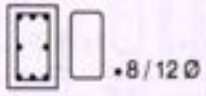
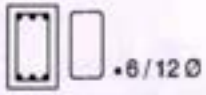


FOOTING DETAIL

PROJECT	TITLE	ARCHITECT	ARCHITECTS PLUS	DESIGN : P.RAVICHANDRAN
"ROYAL KALPATARU" PLOT-K1 & K2	FOOTING CHART	P. Ravichandran. M.E., A.I.I.A., A.I.V.	Regd Architects Approved valuers Structural Consultants	DRAWN : S.KALARANI
		D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742466		SCALE : FIT TO A4
				DWG NO: Str.03
				DATE : 25.03.2025

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

2nd FLOOR to TERRACE FLOOR	———	———	———	 •6/12Ø	 •6/12Ø	 •4/16Ø •4/12Ø	 •8/16Ø	 •6/12Ø
SIZE				1'0"x9"	9"x1'0"	1'3"x9"	9"x1'3"	9"x1'3"
CONCRETE GRADE/COVER				M30	M30	M30	M30	M30
STEEL GRADE Fe				Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe				T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
1st FLOOR to 2nd FLOOR	 •8/16Ø	 •8/12Ø	 •8/12Ø	 •6/12Ø	 •6/12Ø	 •4/16Ø •4/12Ø	 •8/12Ø	 •6/12Ø
SIZE	9"x1'6"	1'3"x9"	1'6"x9"	1'0"x9"	9"x1'0"	1'3"x9"	9"x1'3"	9"x1'3"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
GROUND FLOOR to 1st FLOOR	 •8/12Ø	 •8/12Ø	 •8/12Ø	 •6/12Ø	 •6/12Ø	 •8/12Ø	 •8/12Ø	 •6/12Ø
SIZE	9"x1'6"	1'3"x9"	1'6"x9"	1'0"x9"	9"x1'0"	1'3"x9"	9"x1'3"	9"x1'3"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
PLINTH TO GROUND FLOOR	 •8/12Ø	 •8/12Ø	 •8/12Ø	 •6/12Ø	 •6/12Ø	 •8/12Ø	 •8/12Ø	 •6/12Ø
SIZE	9"x1'6"	1'3"x9"	1'6"x9"	1'0"x9"	9"x1'0"	1'3"x9"	9"x1'3"	9"x1'3"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
COLUMN MARK	A1	C1	E1	B2	C2	B3	C3	E3
NOS OF COLUMN	01	01	01	01	01	01	01	01

NOTES:

1. Only written dimensions are to be followed.
2. All Dimension are in Feet & Inches.
3. Steel to be used : Fe 500
4. Concrete to be used : M-30
5. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
6. Development / Anchorage length shall not be less than 50xdia.of bar
7. Columns and column footings designed for (I) Ground+2 floors
8. Safe bearing capacity of soil : 250KN/m²
9. Center point of each footing should coinside with center point of corresponding column.

ROYAL SHELTER TRICHY-18

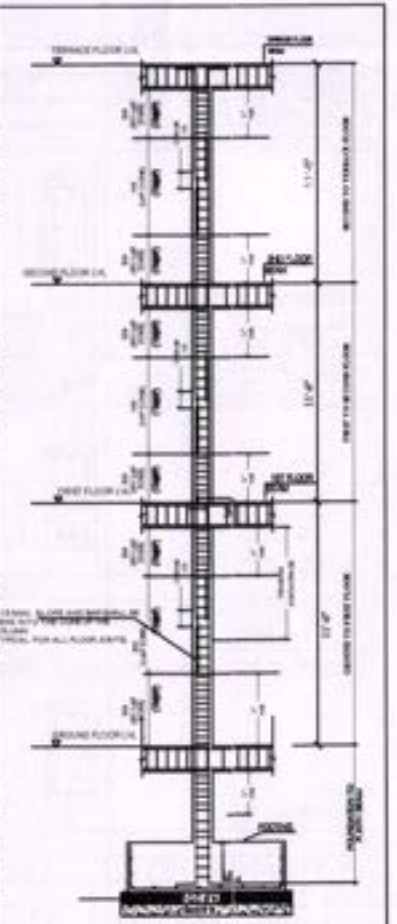
ARCHITECTS PLUS TRICHY-18

Sheet: 1/2

Project	Title		
"ROYAL KALPATARU" PLOT- K1 & K2	Column Chart	N	ARCHITECT P. Ravichandran. M.E., A.I.I.A., A.I.V. ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants D-27, Seventh cross, Thillainagar, Trichy - 18. Ph. 0431-2742466

Design	P.Ravichandran
Drawn	S.Kalarani
Dwg no	Str 02
Scale	Fit to Paper
Date	24.03.2025

2nd FLOOR to TERRACE FLOOR	—	•8/12Ø	•6/12Ø	—	—	•4/16Ø •4/12Ø	•4/16Ø •4/12Ø
SIZE		1'6"x9"	9"x1'3"			1'3"x9"	1'6"x9"
CONCRETE GRADE/COVER		M30	M30			M30	M30
STEEL GRADE Fe		Fe500	Fe500			Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe		T8-7"/Fe500	T8-7"/Fe500			T8-7"/Fe500	T8-7"/Fe500
1st FLOOR to 2nd FLOOR	•8/12Ø	•8/12Ø	•6/12Ø	•12/20Ø	•10/20Ø	•8/12Ø	•4/16Ø •4/12Ø
SIZE	9"x1'6"	1'6"x9"	9"x1'3"	9"x1'6"	1'6"x9"	1'3"x9"	1'6"x9"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
GROUND FLOOR to 1st FLOOR	•8/12Ø	•8/12Ø	•6/12Ø	•8/20Ø •4/16Ø	•10/16Ø	•8/12Ø	•8/12Ø
SIZE	9"x1'6"	1'6"x9"	9"x1'3"	9"x1'6"	1'6"x9"	1'3"x9"	1'6"x9"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
PLINTH TO GROUND FLOOR	•8/12Ø	•8/12Ø	•6/12Ø	•8/20Ø •4/16Ø	•10/16Ø	•8/12Ø	•8/12Ø
SIZE	9"x1'6"	1'6"x9"	9"x1'3"	9"x1'6"	1'6"x9"	1'3"x9"	1'6"x9"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
COLUMN MARK	A4	D5	E5	C6	A7	C7	E7
NOS.OF COLUMN	01	01	01	01	01	01	01



TYPICAL ELEVATION SHOWING RC COLUMN RODS SPLICING DETAILS

NOTES:

1. Only written dimensions are to be followed.
2. All Dimension are in Feet & Inches.
3. Steel to be used : Fe 500
4. Concrete to be used : M-25
5. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
6. Development / Anchorage length shall not be less than 50dia of bar.
7. Columns and column footings designed for (1) Ground+2 floors
8. Safe bearing capacity of soil - 250KN/m²
9. Center point of each footing should coincide with center point of corresponding column.

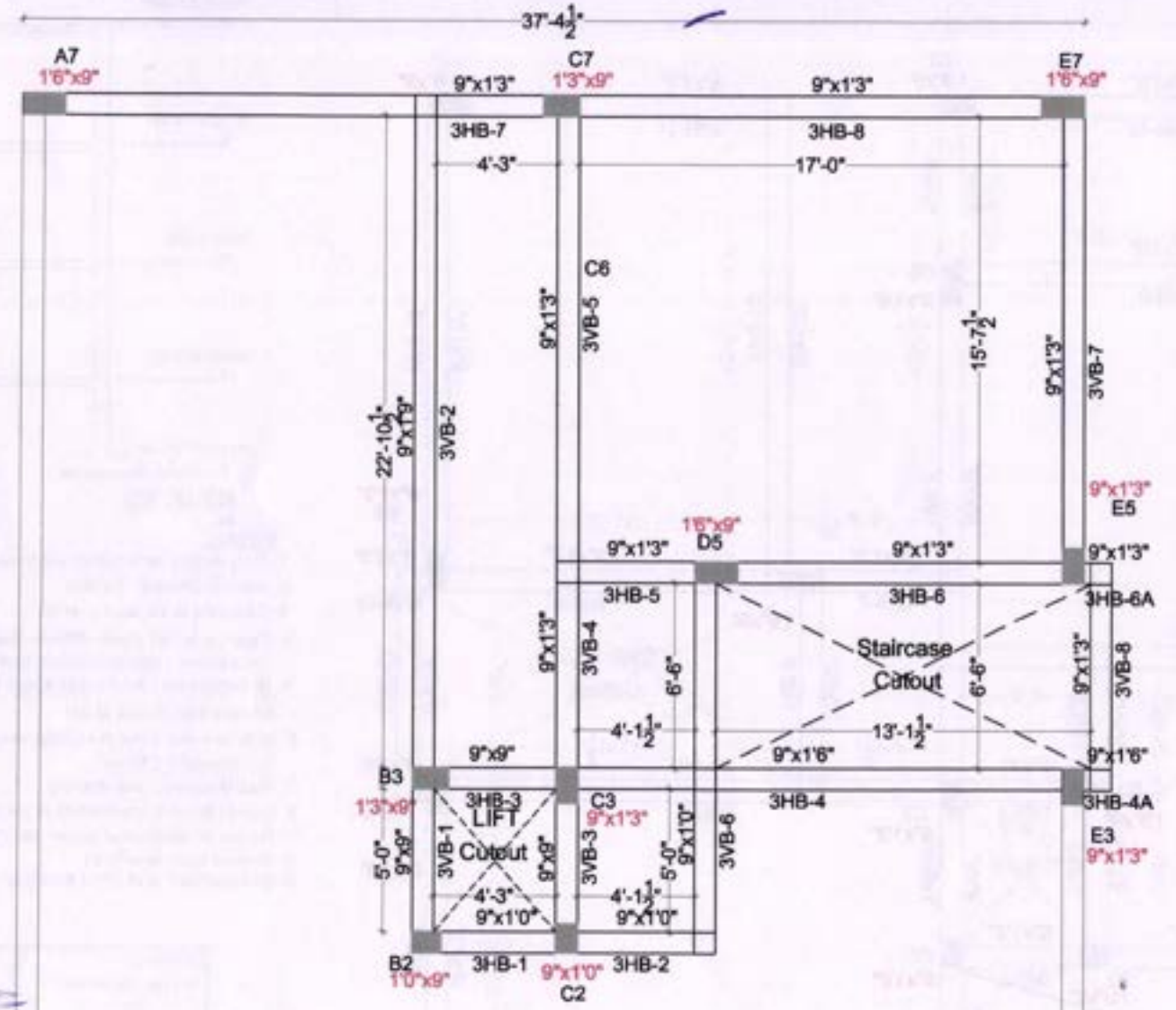
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Project "ROYAL KALPATARU" PLOT- K1 & K2	Title Column Chart	N	ARCHITECT P. Ravichandran, M.E., A.I.I.A., A.I.V., ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants. D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742466

Design	P.Ravichandran
Drawn	S.Kalanani
Dwg.no	Str.02
Scale	Fit to Paper
Date	24.03.2025

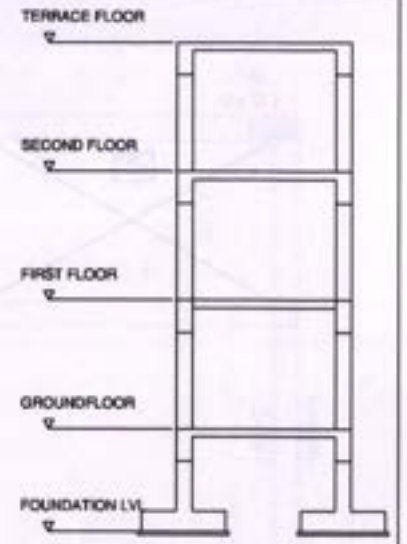
ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY



Second floor Roof Framing plan

(Terrace Framing plan)



KEY SECTION

NOTES:

1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : M-25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
5. Development / Anchorage length shall not be less than 50xdia.of bar
6. Columns and column footings designed for (I) Ground + 2 floors
7. Slab thickness refer drawing.
6. Layout Road lvl decided at as per site
7. Portico lvl decided at as per site.(-1'6" to -1'9")
8. Ground floor level is ±0
9. Ground floor roof (First floor level is +11'0")
10. First floor roof (Second floor level is +22'0")
11. Second floor roof (Terrace level is +33'0")

PROJECT
"ROYAL KALPATARU"
PH-II
Unit- K1&K2

N

TITLE
Terrace Framing plan

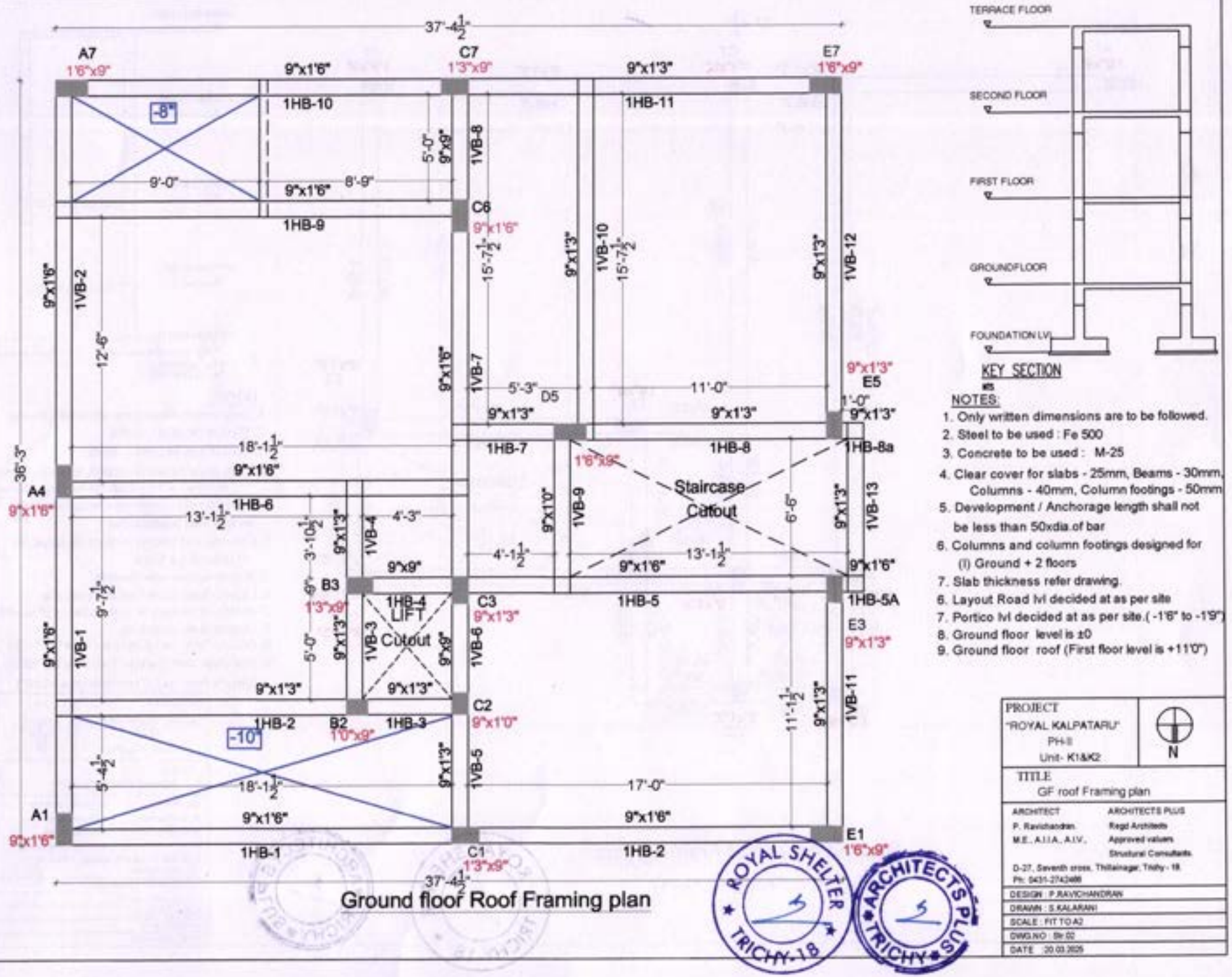
ARCHITECT
P. Ravichandran,
M.E., A.I.I.A., A.I.V.,

ARCHITECTS PLUS
Regd Architects
Approved valuers
Structural Consultants.
D-27, Seventh cross, Thillainagar, Trichy - 18.
Ph: 0431-2742466

DESIGN : P.RAVICHANDRAN
DRAWN : S.KALARANI
SCALE : FIT TO A2
DWG.NO : Str.02
DATE 20.03.2026

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY



KEY SECTION

NOTES:

1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : M-25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm
5. Development / Anchorage length shall not be less than 50xdia.of bar
6. Columns and column footings designed for (i) Ground + 2 floors
7. Slab thickness refer drawing.
6. Layout Road lvl decided at as per site
7. Portico lvl decided at as per site.(-1'6" to -1'9")
8. Ground floor level is ±0
9. Ground floor roof (First floor level is +11'0")

PROJECT
"ROYAL KALPATARU"
PH-II
Unit- K1&K2

N

TITLE
GF roof Framing plan

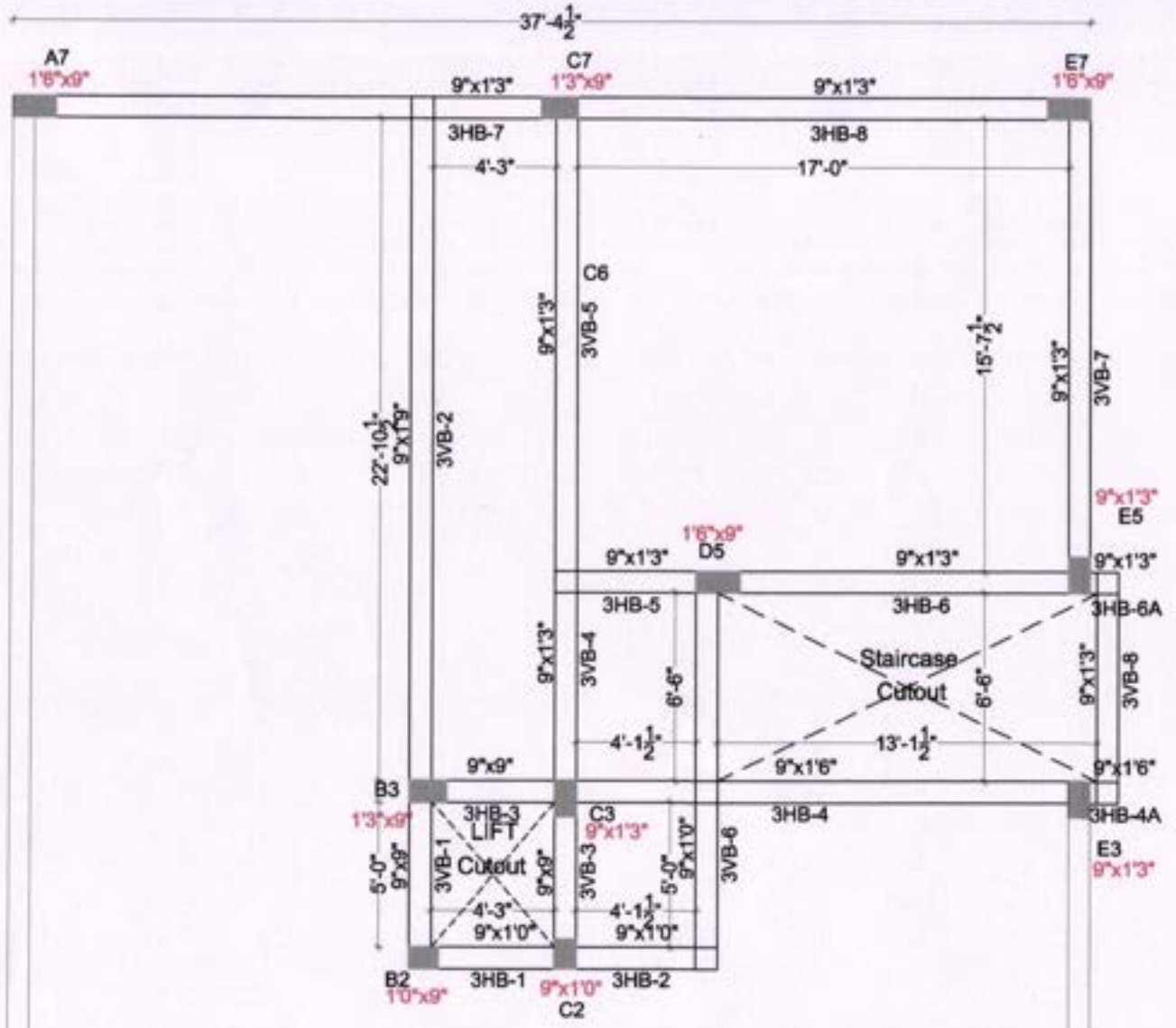
ARCHITECT
P. Ravichandran.
M.E., A.I.I.A., A.I.V.,

ARCHITECTS PLUS
Regd Architects
Approved valuers
Structural Consultants
D-27, Seventh cross, Thillainagar, Trichy - 18.
Ph: 0431-2742488

DESIGN : P.RAVICHANDRAN
DRAWN : S.KALARANI
SCALE : FIT TO A2
DWG.NO : Str 02
DATE : 20.03.2025

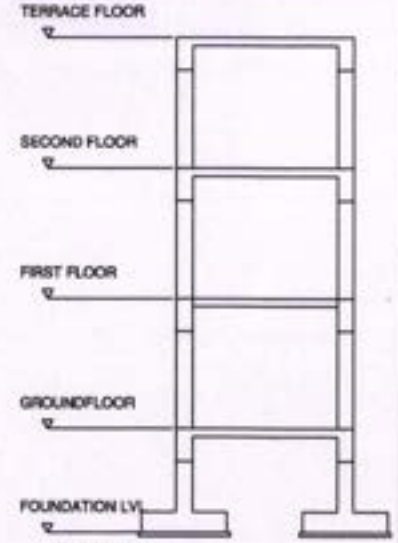
ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY



Second floor Roof Framing plan

(Terrace Framing plan)



KEY SECTION

NOTES:

1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : M-25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
5. Development / Anchorage length shall not be less than 50xdia.of bar
6. Columns and column footings designed for (I) Ground + 2 floors
7. Slab thickness refer drawing.
6. Layout Road lvl decided at as per site
7. Portico lvl decided at as per site.(-1'6" to -1'9")
8. Ground floor level is ±0
9. Ground floor roof (First floor level is +11'0")
10. First floor roof (Second floor level is +22'0")
11. Second floor roof (Terrace level is +33'0")

PROJECT
"ROYAL KALPATARU"
PH-II
Unit- K1&K2

N

TITLE
Terrace Framing plan

ARCHITECT
P. Ravichandran.
M.E., A.I.I.A., A.I.V.,

ARCHITECTS PLUS
Regd.Architects
Approved valuers
Structural Consultants.
D-27, Seventh cross, Thillainagar, Trichy - 18.
Ph: 0431-2742466

DESIGN : P.RAVICHANDRAN
DRAWN : S.KALAIRANI
SCALE : FIT TO A2
DWG.NO : Str.02
DATE : 20.03.2025

ROYAL SHELTER TRICHY-18

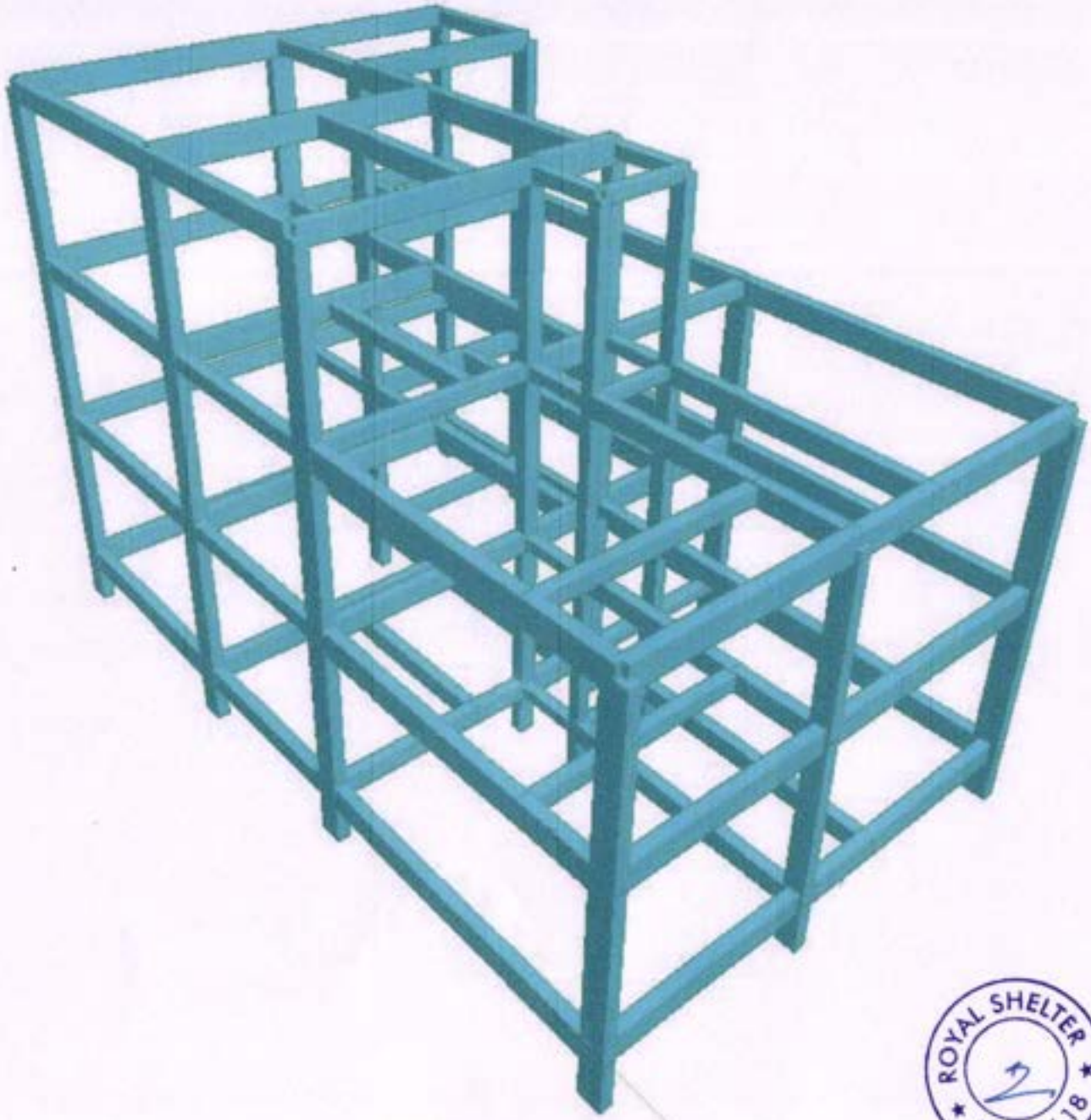
ARCHITECTS PLUS TRICHY



ROYAL SHELTER
TRICHY-18

ARCHITECTS PLUS
TRICHY

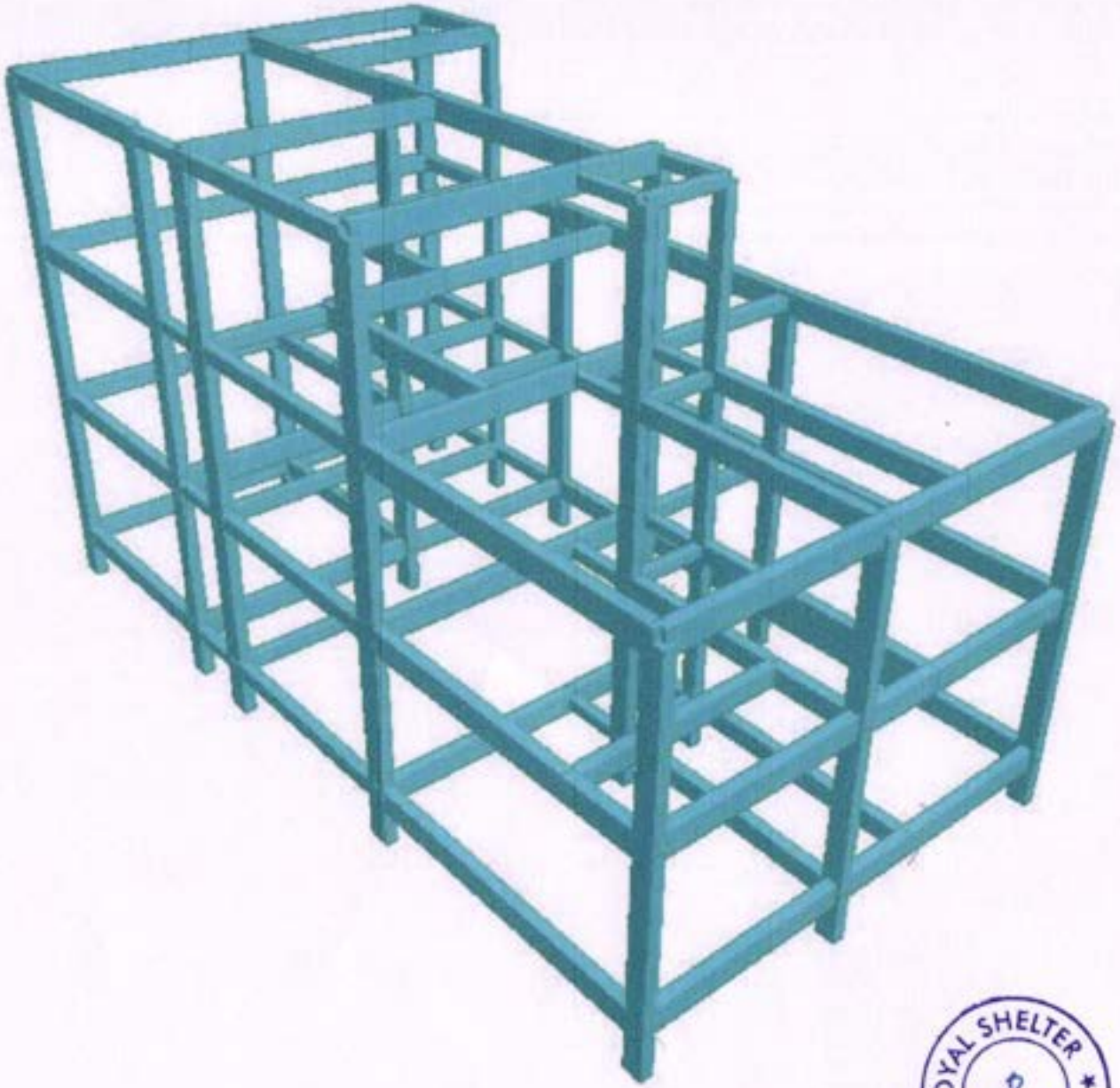
UNIT- J3 / 3d View



ROYAL SHELTER
TRICHY-18

ARCHITECTS PLUS
TRICHY

UNIT- J2 / 3d View



ROYAL SHELTER
TRICHY-18

ARCHITECTS PLUS
TRICHY

UNIT- J1 / 3d View



ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

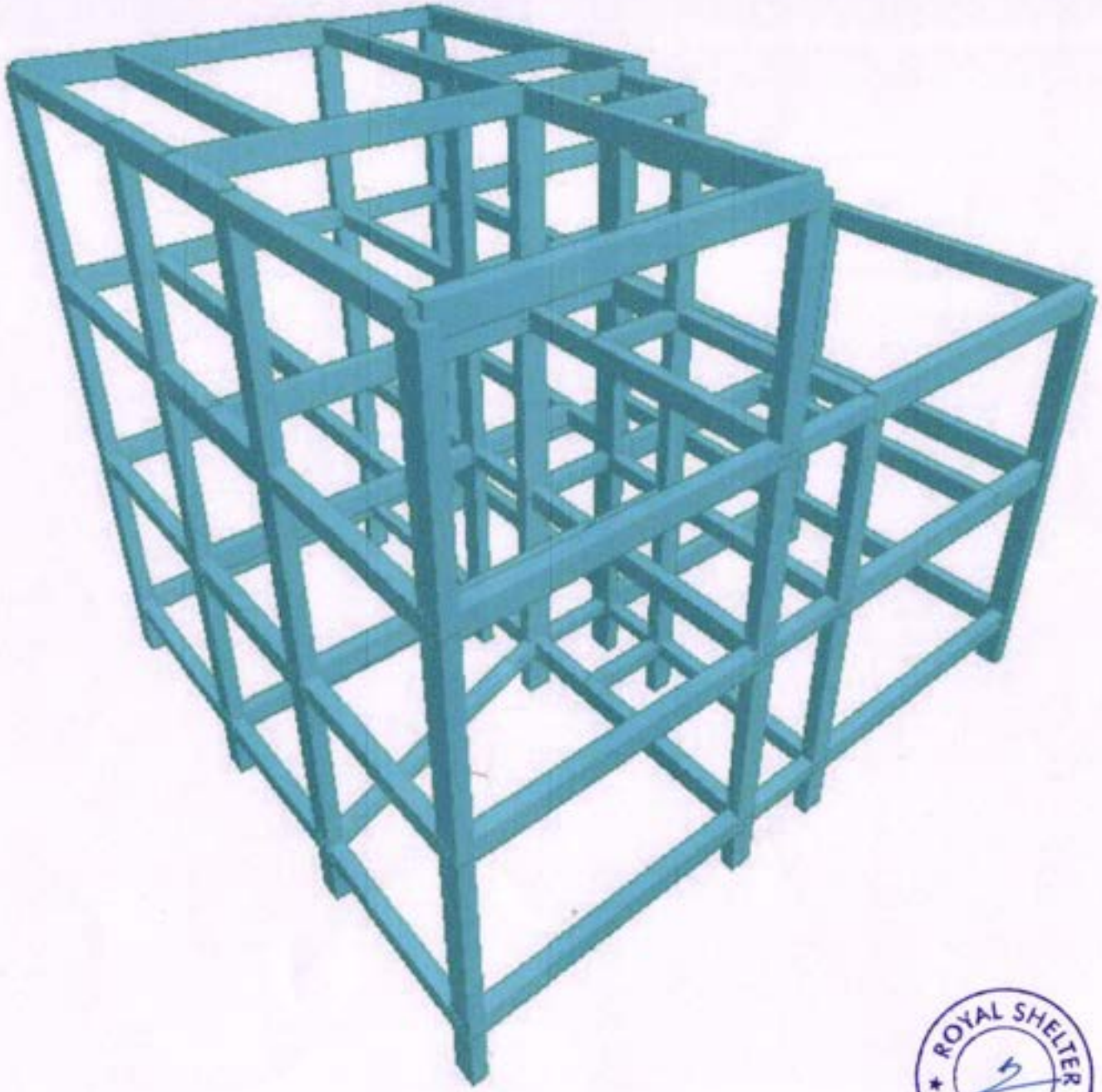
UNIT- H2 / 3d View



ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

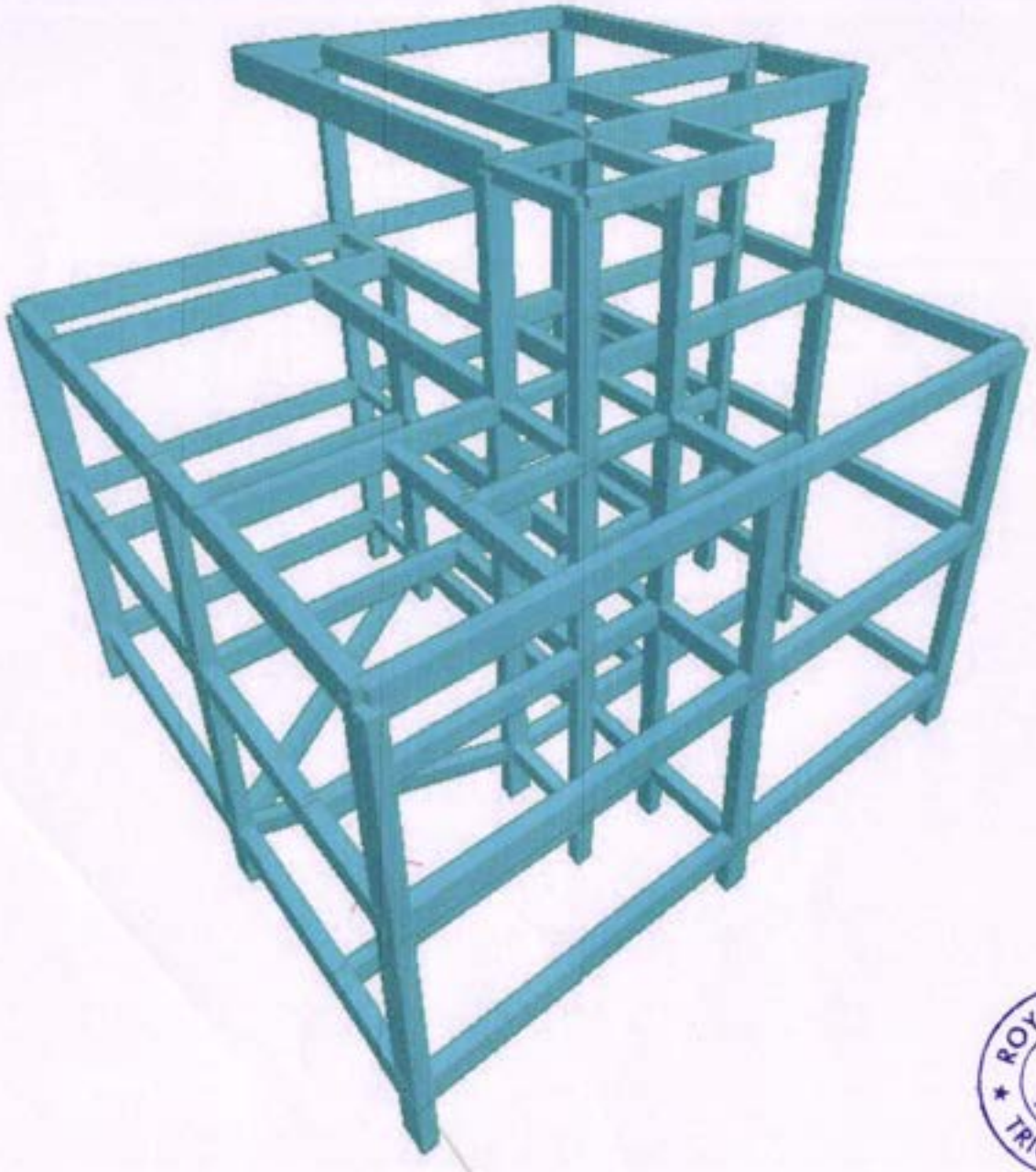
UNIT- H1 / 3d View



UNIT- M1 & M2 / 3d View

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY



ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

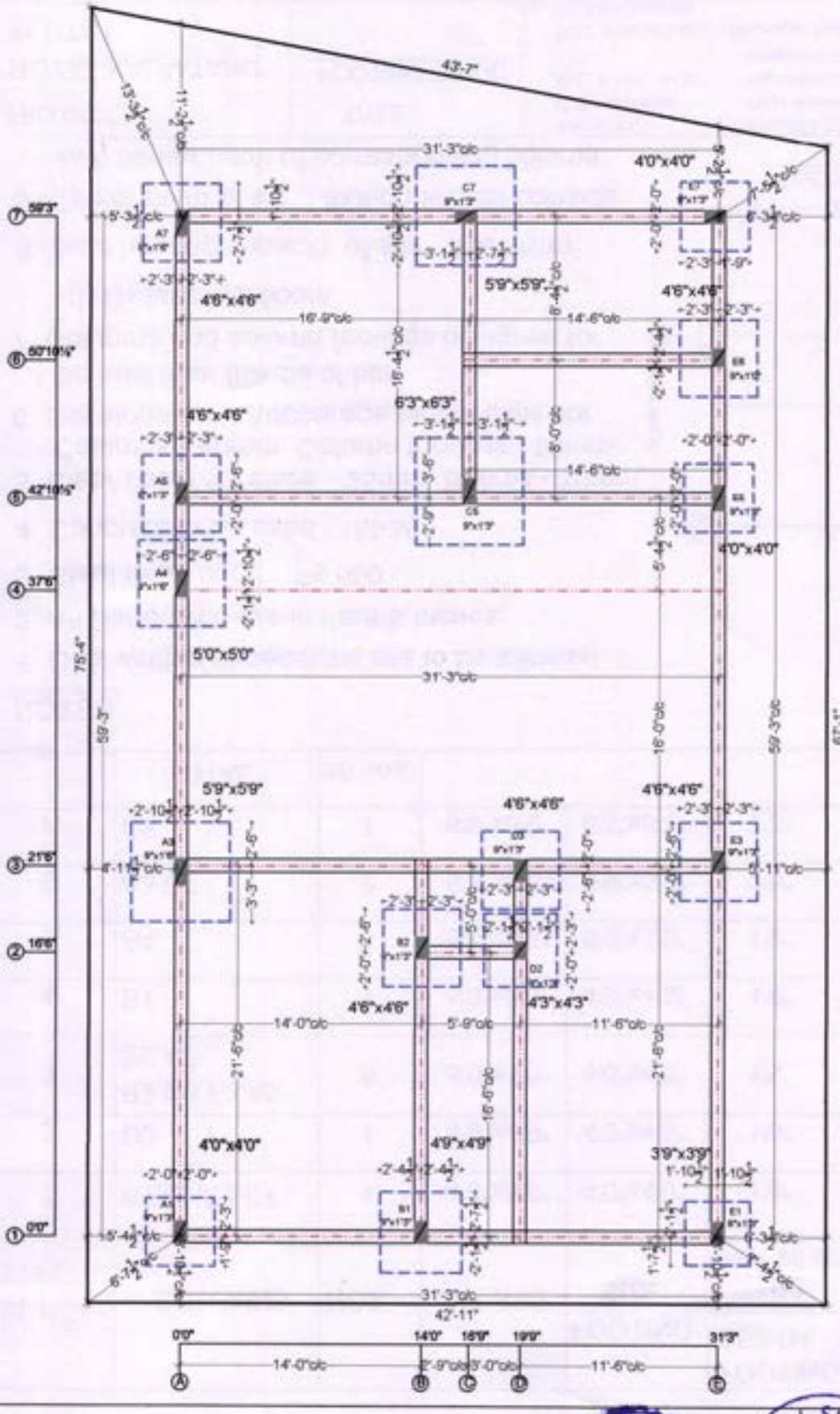
UNIT- K1 & K2 / 3d View

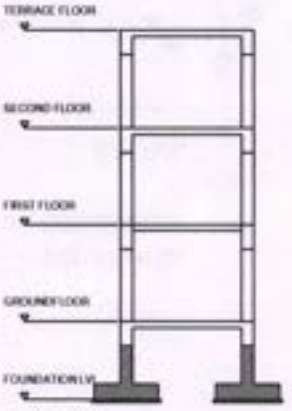
ANNEXURE-A

STRUCTURAL DRAWINGS

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY





KEY SECTION

NOTES:

1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : Column M-30 & Beam M25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
5. Development / Anchorage length shall not be less than 50xdia.of bar
6. Columns and column footings designed for (I) Ground + 2 floors
7. Safe bearing capacity of soil : 250KN/m²
8. Center point of each footing should coinside with center point of corresponding column.

PROJECT "ROYAL KALPATARU" PH-II Unit- J1	N
TITLE Centerline Marking detail	
ARCHITECT P. Ravichandran, M.E., A.I.I.A., A.I.V., D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742466	ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants
DESIGN : P.RAVICHANDRAN	
DRAWN : S.KALARANI	
SCALE : FIT TO A2	
DWG.NO : St-01	
DATE : 28.03.2025	

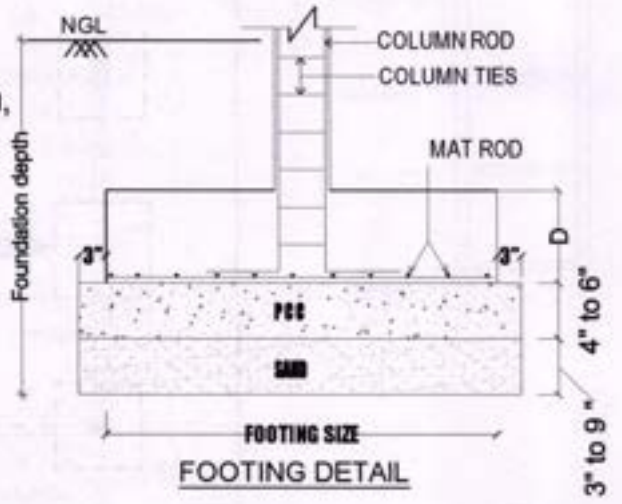
ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

SL.NO/ TYPE	COLUMNS	NOS.	PIT SIZE	FOOTING SIZE	FOOTING DEPTH D2 Over all depth	MAT ROD
1.	A1,E1,E5,E7	4	4'6"x4'6"	4'0"x4'0"	1'6"	12 Ø 7" C/C bothways
2.	D2	1	4'9"x4'9"	4'3"x4'3"	1'6"	12 Ø 7" C/C bothways
3.	B2,D3,E3,A5, E6,A7	6	5'0"x5'0"	4'6"x4'6"	1'9"	12 Ø 7" C/C bothways
4.	B1	1	5'3"x5'3"	4'9"x4'9"	1'9"	12 Ø 7" C/C bothways
5.	A4	1	5'6"x5'6"	5'0"x5'0"	1'9"	12 Ø 7" C/C bothways
6.	A3,C7	2	6'3"x6'3"	5'9"x5'9"	2'0"	12 Ø 7" C/C bothways
7.	C5	1	6'9"x6'9"	6'3"x6'3"	2'3"	12 Ø 6" C/C bothways
	TOTAL	16 nos.				

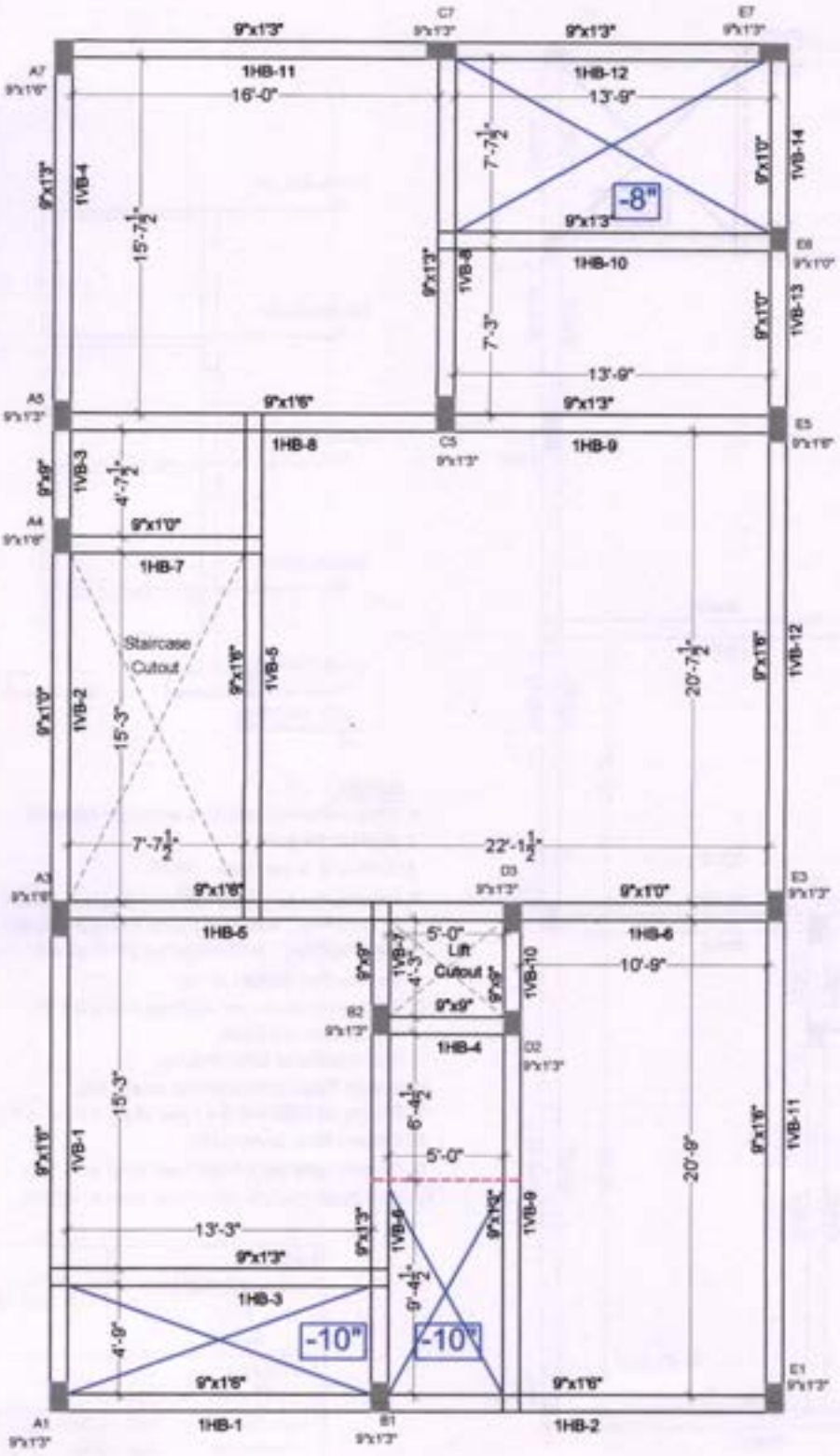
NOTES:

1. Only written dimensions are to be followed.
2. All Dimension are in Feet & Inches.
3. Steel to be used : Fe 500
4. Concrete to be used : M-30
5. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
6. Development / Anchorage length shall not be less than 50xdia.of bar
7. Columns and column footings designed for
   (I) Ground + 2 floors
8. Safe bearing capacity of soil : 250KN/m²
9. Center point of each footing should coinside with center point of corresponding column.

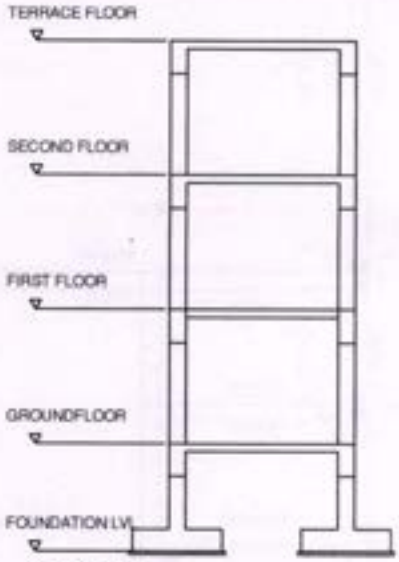


FOOTING DETAIL

PROJECT	TITLE		
"ROYAL KALPATARU" PLOT-J1	FOOTING CHART	ARCHITECT P. Ravichandran. M.E., A.I.I.A., A.I.V., D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742466	ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants	DESIGN : P.RAVICHANDRAN DRAWN : S.KALARANI SCALE : FIT TO A4 DWG NO: Str.03 DATE : 18.06.2025



GROUND FLOOR ROOF FRAMING PLAN



KEY SECTION

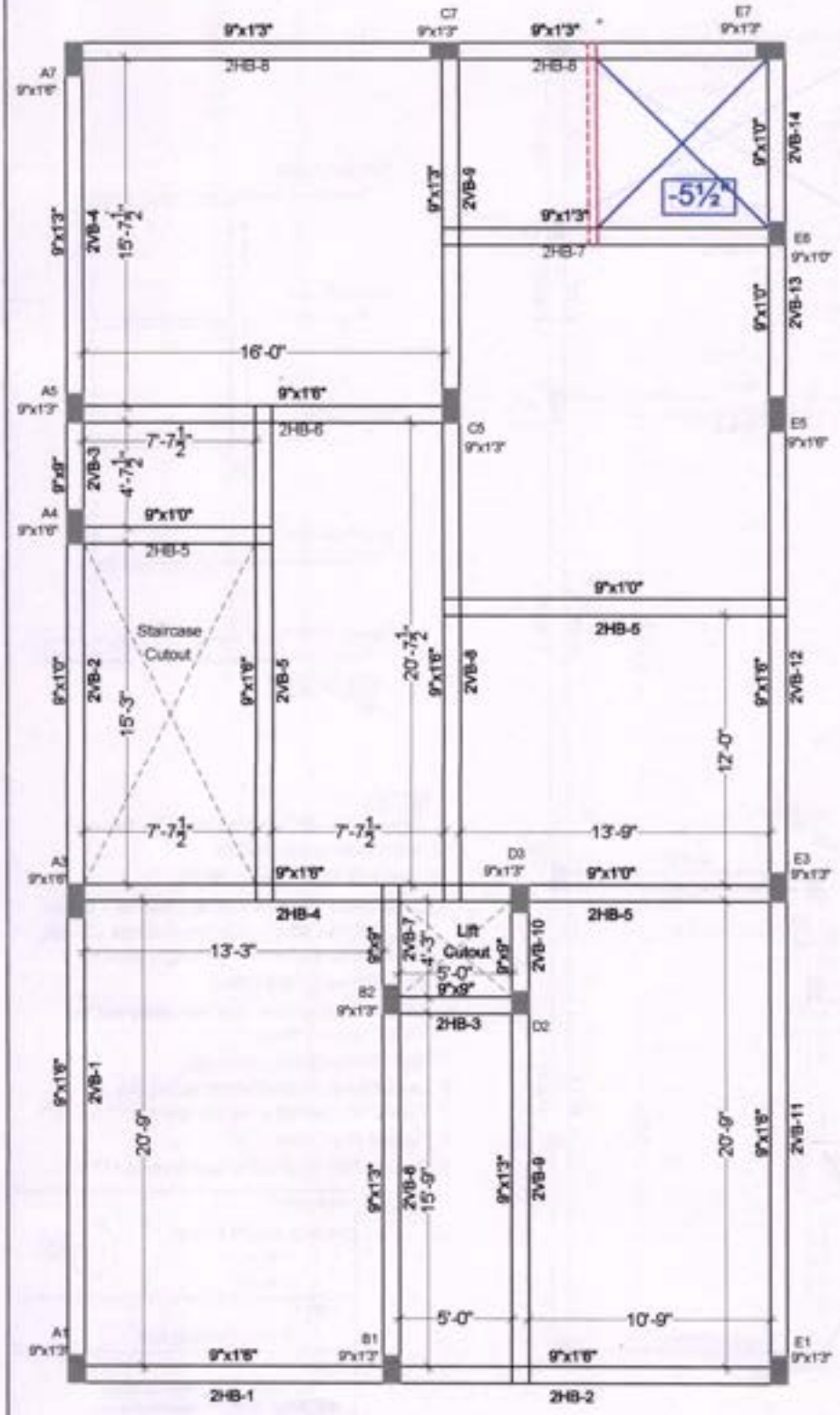
NOTES:

1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : M-25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
5. Development / Anchorage length shall not be less than 50xdia.of bar
6. Columns and column footings designed for (I) Ground + 2 floors
7. Slab thickness refer drawing.
6. Layout Road lvl decided at as per site
7. Portico lvl decided at as per site.(-1'6" to -1'9")
8. Ground floor level is ±0
9. Ground floor roof (First floor level is +11'0")

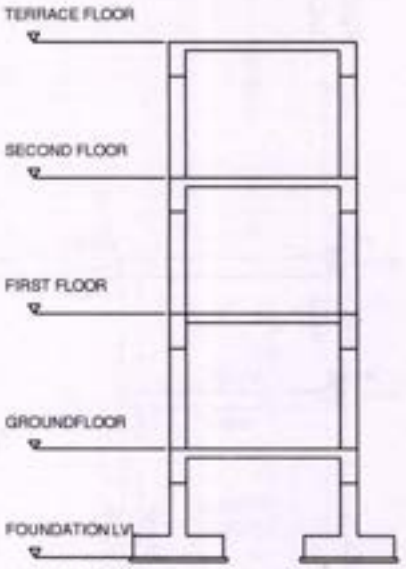
PROJECT "ROYAL KALPATARU" PH-II Unit- J1	N
TITLE GF roof Framing plan	
ARCHITECT P. Ravichandran M.E., A.I.I.A, A.I.V.,	ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742468
DESIGN : P.RAVICHANDRAN	
DRAWN : S.KALARANI	
SCALE : FIT TO A2	
DWG NO : Str.02	
DATE : 27.03.2025	

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18



FIRST FLOOR ROOF FRAMING PLAN



KEY SECTION

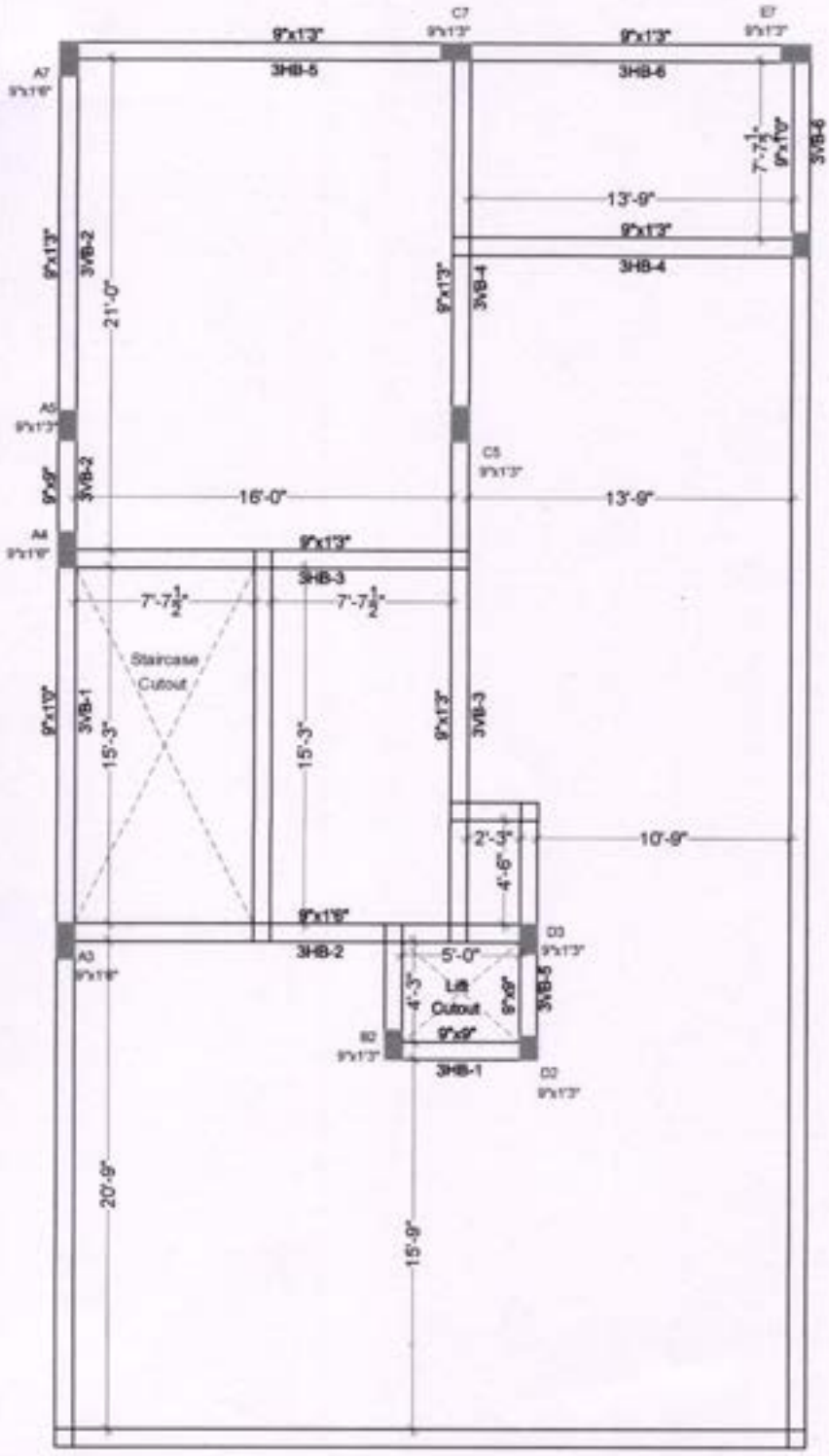
NOTES:

1. Only written dimensions are to be followed.
2. Steel to be used :
3. Concrete to be used : M-25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm. Fe 500
5. Development / Anchorage length shall not be less than 50xdia of bar
6. Columns and column footings designed for (I) Ground + 2 floors
7. Slab thickness refer drawing.
6. Layout Road lvl decided at as per site
7. Portico lvl decided at as per site.(-1'6" to -1'9")
8. Ground floor level is ±0
9. Ground floor roof (First floor level is +11'0")
10. First floor roof (Second floor level is +22'0")

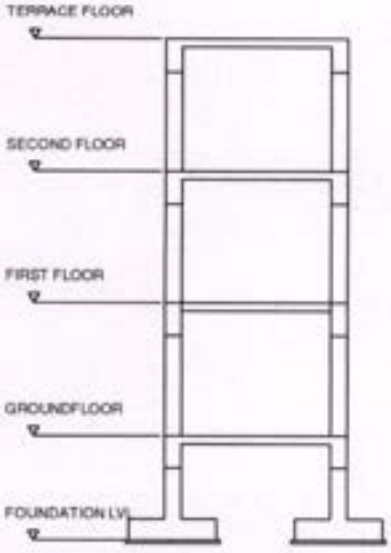
PROJECT "ROYAL KALPATARU" PH-II Unit- J1	N
TITLE FF roof Framing plan	
ARCHITECT P. Ravichandran. M.E., A.I.I.A., A.I.V.,	ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants. D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742468
DESIGN : P.RAVICHANDRAN	
DRAWN : S.KALARANI	
SCALE : FIT TO A2	
DWG.NO : Str.02	
DATE : 27.03.2025	

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18



TERRACE FRAMING PLAN



KEY SECTION

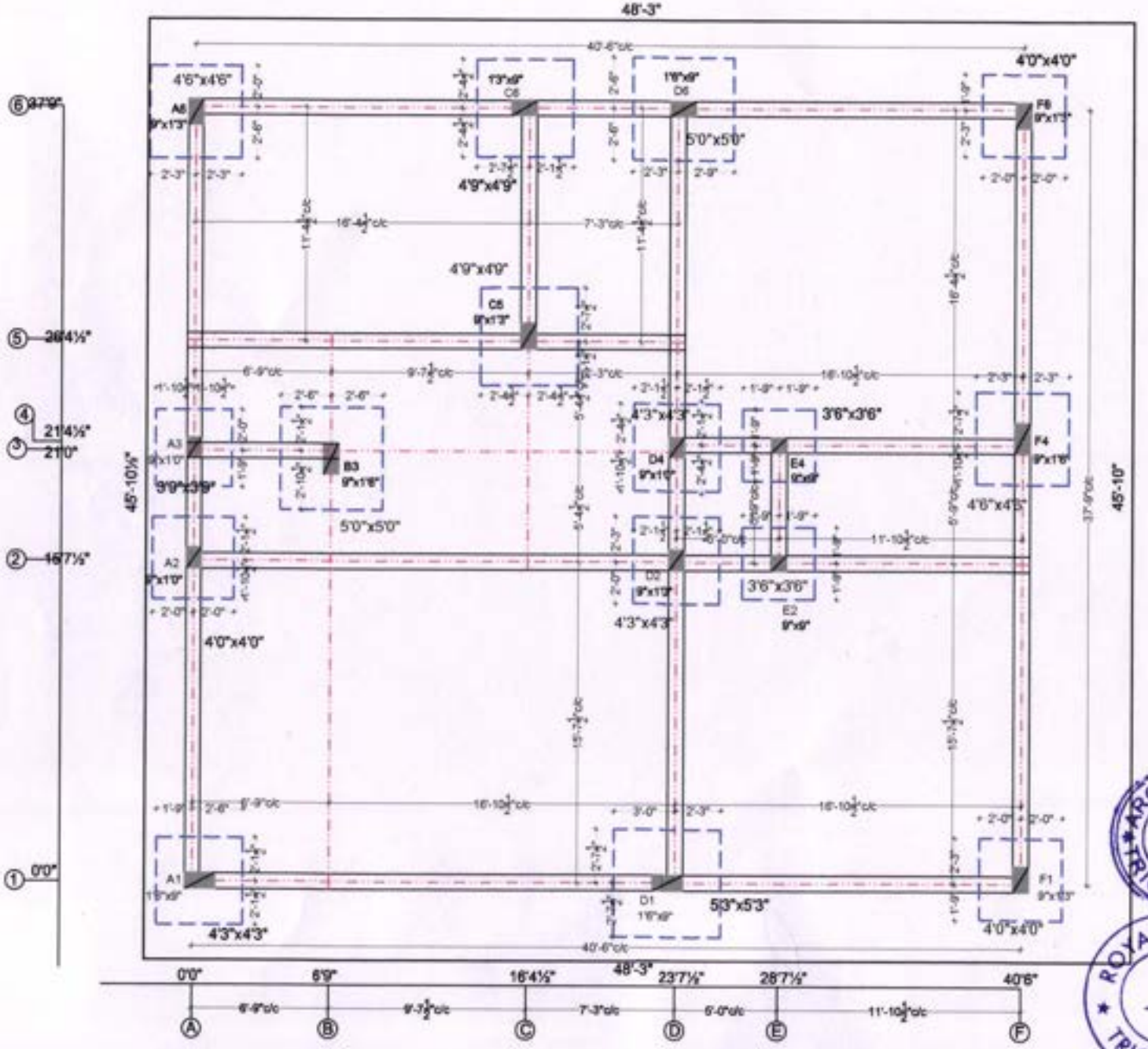
NOTES:

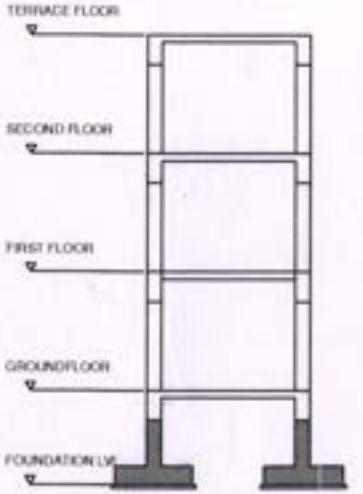
1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : M-25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
5. Development / Anchorage length shall not be less than 50xdia.of bar
6. Columns and column footings designed for (I) Ground + 2 floors
7. Slab thickness refer drawing.
6. Layout Road lvl decided at as per site
7. Portico lvl decided at as per site.(-1'6" to -1'9")
8. Ground floor level is ±0
9. Ground floor roof (First floor level is +11'0")
10. First floor roof (Second floor level is +22'0")
11. Second floor roof (Terrace level is +33'0")

PROJECT "ROYAL KALPATARU" PH-II Unit- J1	N
TITLE Terrace Framing plan	
ARCHITECT P. Ravichandran. M.E., A.I.I.A., A.I.V.,	ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742466
DESIGN : P.RAVICHANDRAN	
DRAWN : S.KALARANI	
SCALE : FIT TO A2	
DWG.NO : Str.02	
DATE : 27.03.2025	

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18





KEY SECTION

NOTES:

1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : Column M-30 & Beam M25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
5. Development / Anchorage length shall not be less than 50xdia.of bar
6. Columns and column footings designed for (I) Ground + 2 floors
7. Safe bearing capacity of soil : 250KN/m²
8. Center point of each footing should coinside with center point of corresponding column.

PROJECT
"ROYAL KALPATARU"
PH-II
Unit- H1

N

TITLE
Footing Marking detail

ARCHITECT
P. Ravichandran.
M.E., A.I.I.A., A.I.V.,

ARCHITECTS PLUS
Regd Architects
Approved valuers
Structural Consultants.

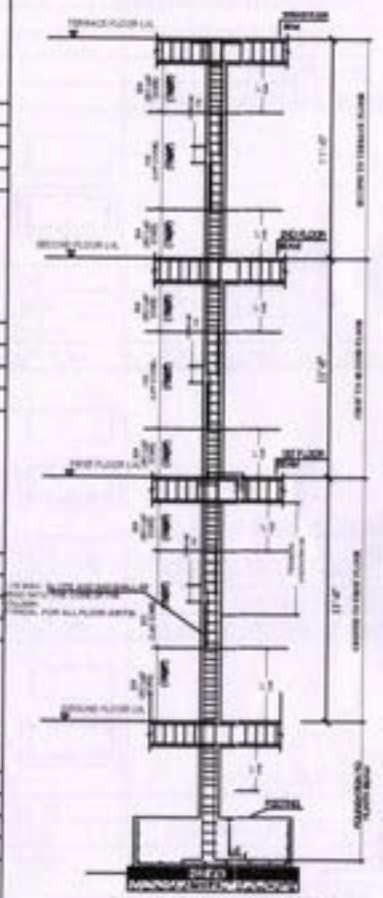
D-27, Seventh cross, Thillainagar, Trichy - 18.
Ph: 0431-2742466

DESIGN	P.RAVICHANDRAN
DRAWN	S.KALARANI
SCALE	FIT TO A2
DWG.NO	Str.02
DATE	04.03.2025

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

2nd FLOOR to TERRACE FLOOR	4/12Ø		6/12Ø	8/16Ø	6/12Ø	8/12Ø	
SIZE	9"x9"		9"x1'3"	9"x1'3"	1'3"x9"	1'3"x9"	
CONCRETE GRADE/COVER	M30		M30	M30	M30	M30	
STEEL GRADE Fe	Fe500		Fe500	Fe500	Fe500	Fe500	
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500		T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	
1st FLOOR to 2nd FLOOR	4/12Ø	8/12Ø	6/12Ø	4/16Ø 4/12Ø	6/12Ø	8/12Ø	8/16Ø
SIZE	9"x9"	9"x1'6"	9"x1'3"	9"x1'3"	1'3"x9"	1'3"x9"	9"x1'3"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
GROUND FLOOR to 1st FLOOR	4/12Ø	8/12Ø	8/12Ø	4/16Ø 4/12Ø	8/12Ø	8/12Ø	8/12Ø
SIZE	9"x9"	9"x1'6"	9"x1'3"	9"x1'3"	1'3"x9"	1'3"x9"	9"x1'3"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
PLINTH TO GROUND FLOOR	4/12Ø	8/12Ø	8/12Ø	4/16Ø 4/12Ø	8/12Ø	8/12Ø	8/12Ø
SIZE	9"x9"	9"x1'6"	9"x1'3"	9"x1'3"	1'3"x9"	1'3"x9"	9"x1'3"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
COLUMN MARK	E4	F4	C5	A6	C8	D8	F6
NOS.OF.COLUMN	01	01	01	01	01	01	01



TYPICAL ELEVATION SHOWING
RC COLUMN RODS SPLICING DETAILS

NOTES

1. Only written dimensions are to be followed.
2. All Dimension are in Feet & Inches.
3. Steel to be used : Fe 500
4. Concrete to be used : M-25
5. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
6. Development / Anchorage length shall not be less than 50dia of bar
7. Columns and column footings designed for (I) Ground+2 floors
8. Safe bearing capacity of soil : 25KN/m²
9. Center point of each footing should coincide with center point of corresponding column

Sheet: 2/2

Project: "ROYAL KALPATARU" PLOT- H1	Title: Column Chart	N	ARCHITECT: P. Ravichandran, M.E., A.I.I.A., A.I.V. — ARCHITECTS PLUS: Regd Architects, Approved valuers, Structural Consultants. D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742466

Design	: P.Ravichandran
Drawn	: S.Kalairani
Dwg no	: 09/.02
Scale	: Fit to Paper
Date	: 24.03.2025

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

2nd FLOOR to TERRACE FLOOR	———	———	———	•8/12Ø	•4/16Ø •4/12Ø	•4/12Ø	•8/12Ø	•8/12Ø
SIZE				9"x1'0"	9"x1'3"	9"x1'0"	9"x1'0"	9"x1'6"
CONCRETE GRADE/COVER				M30	M30	M30	M30	M30
STEEL GRADE Fe				Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe				T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
1st FLOOR to 2nd FLOOR	•10/20Ø •2/12Ø	•12/16Ø	•4/20Ø •4/16Ø	•8/12Ø	•8/12Ø	•4/12Ø	•8/12Ø	•4/16Ø •4/12Ø
SIZE	1'6"x9"	1'6"x9"	9"x1'3"	9"x1'0"	9"x1'3"	9"x1'0"	9"x1'0"	9"x1'6"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
GROUND FLOOR to 1st FLOOR	•10/16Ø •2/12Ø	•12/12Ø	•4/16Ø •4/12Ø	•8/12Ø	•8/12Ø	•4/12Ø	•8/12Ø	•4/16Ø •4/12Ø
SIZE	1'6"x9"	1'6"x9"	9"x1'3"	9"x1'0"	9"x1'3"	9"x9"	9"x1'0"	9"x1'6"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
PLINTH TO GROUND FLOOR	•10/16Ø •2/12Ø	•12/12Ø	•4/16Ø •4/12Ø	•8/12Ø	•8/12Ø	•4/12Ø	•8/12Ø	•4/16Ø •4/12Ø
SIZE	1'6"x9"	1'6"x9"	9"x1'3"	9"x1'0"	9"x1'3"	9"x9"	9"x1'0"	9"x1'6"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
COLUMN MARK	A1	D1	F1	A2	D2	E2	A3	B3
NOS OF COLUMN	01	01	01	01	01	01	01	01

NOTES:

1. Only written dimensions are to be followed.
2. All Dimension are in Feet & Inches.
3. Steel to be used : Fe 500
4. Concrete to be used : M-30
5. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
6. Development / Anchorage length shall not be less than 50xdia.of bar
7. Columns and column footings designed for (I) Ground+2 floors
8. Safe bearing capacity of soil : 250KN/m²
9. Center point of each footing should coinside with center point of corresponding column.

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

Project	Title	
"ROYAL KALPATARU" PLOT- H1	Column Chart	N

ARCHITECT
P. Ravichandran.
M.E., A.I.I.A., A.I.V.,

ARCHITECTS PLUS
Regd Architects
Approved valuers
Structural Consultants.
D-27, Seventh cross, Thillainagar, Trichy - 18.
Ph: 0431-2742466

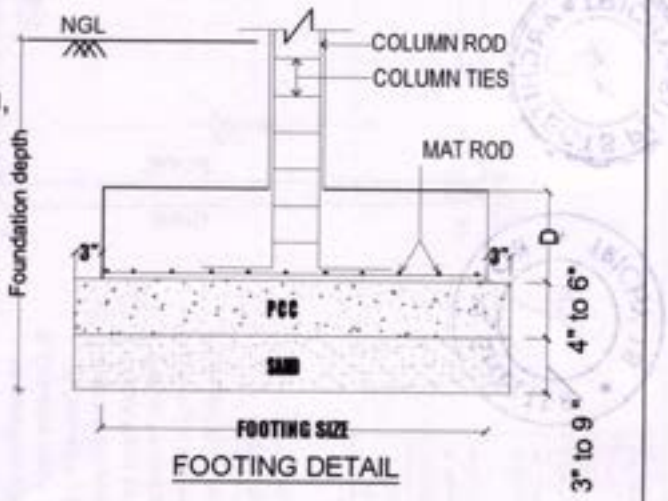
Sheet: 1/2

Design	P.Ravichandran
Drawn	S.Kalarani
Dwg no	Str 02
Scale	Fit to Paper
Date	24.03.2025

SL.NO/ TYPE	COLUMNS	NOS.	PIT SIZE	FOOTING SIZE	FOOTING DEPTH D2 Over all depth	MAT ROD
1.	E2,E4	2	4'0"x4'0"	3'6"x3'6"	1'3"	12 @ 7" C/C bothways
2.	A3	1	4'3"x4'3"	3'9"x3'9"	1'3"	12 @ 7" C/C bothways
3.	F1,A2,F6	3	4'6"x4'6"	4'0"x4'0"	1'3"	12 @ 7" C/C bothways
4.	A1,D2,D4	3	4'9"x4'9"	4'3"x4'3"	1'6"	12 @ 7" C/C bothways
5.	F4,A6	2	5'0"x5'0"	4'6"x4'6"	1'6"	12 @ 7" C/C bothways
6.	C5,C6	2	5'3"x5'3"	4'9"x4'9"	1'9"	12 @ 7" C/C bothways
7.	B3,D6	2	5'6"x5'6"	5'0"x5'0"	1'9"	12 @ 7" C/C bothways
8.	D1	1	5'9"x5'9"	5'3"x5'3"	1'9"	12 @ 7" C/C bothways
	TOTAL	16 nos.				

NOTES:

1. Only written dimensions are to be followed.
2. All Dimension are in Feet & Inches.
3. Steel to be used : Fe 500
4. Concrete to be used : M-30
5. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
6. Development / Anchorage length shall not be less than 50xdia.of bar
7. Columns and column footings designed for
   (I) Ground + 2 floors
8. Safe bearing capacity of soil : 250KN/m²
9. Center point of each footing should coinside with center point of corresponding column.



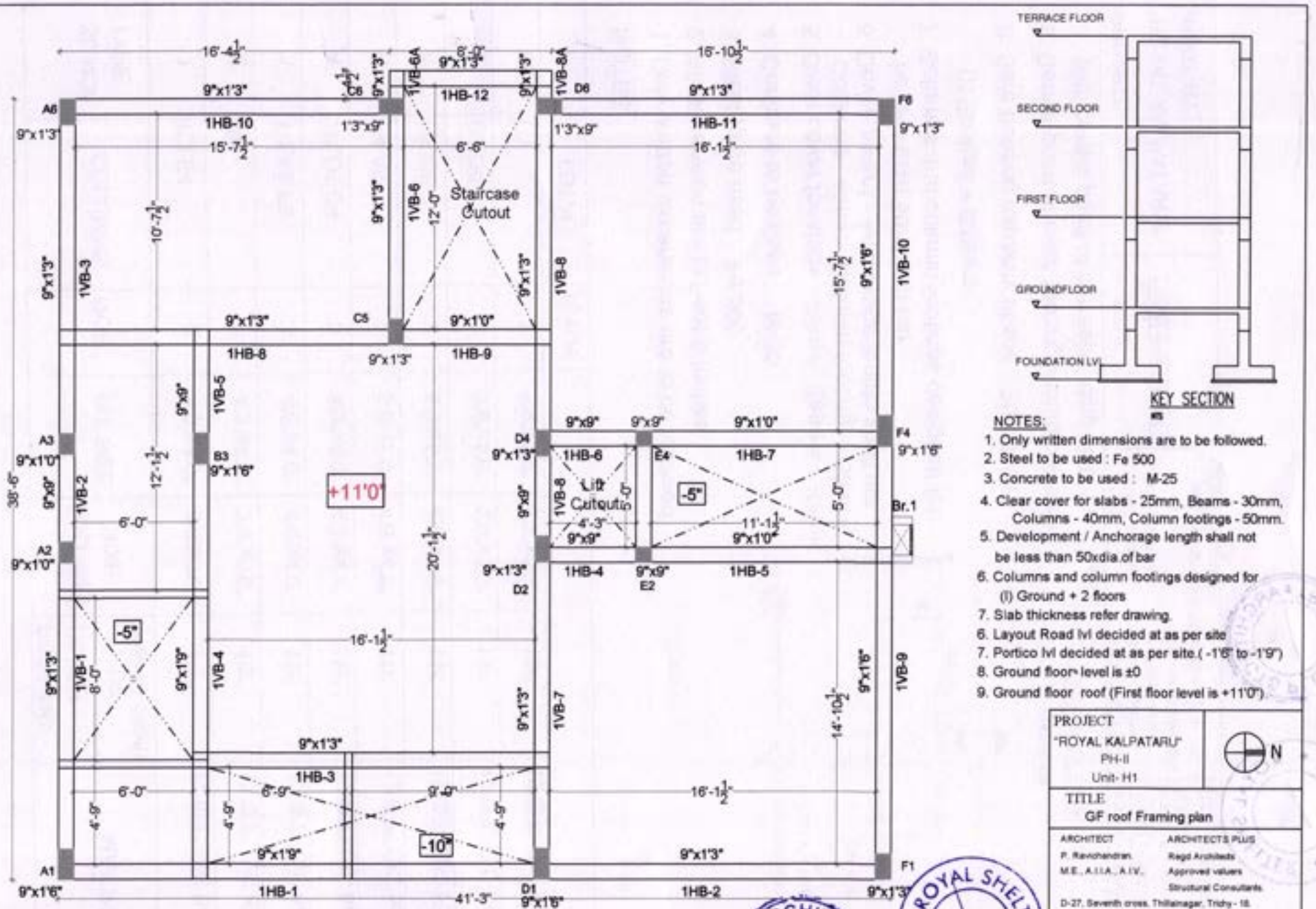
FOOTING DETAIL

PROJECT	TITLE		
"ROYAL KALPATARU" PLOT-H1	FOOTING CHART	ARCHITECT P. Ravichandran. M.E., A.I.I.A., A.I.V. D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742466	ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants.

DESIGN : P.RAVICHANDRAN
DRAWN : S.KALARANI
SCALE : FIT TO A4
DWG NO: Str.03
DATE : 25.03.2025

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18



Ground floor roof Framing Plan

KEY SECTION

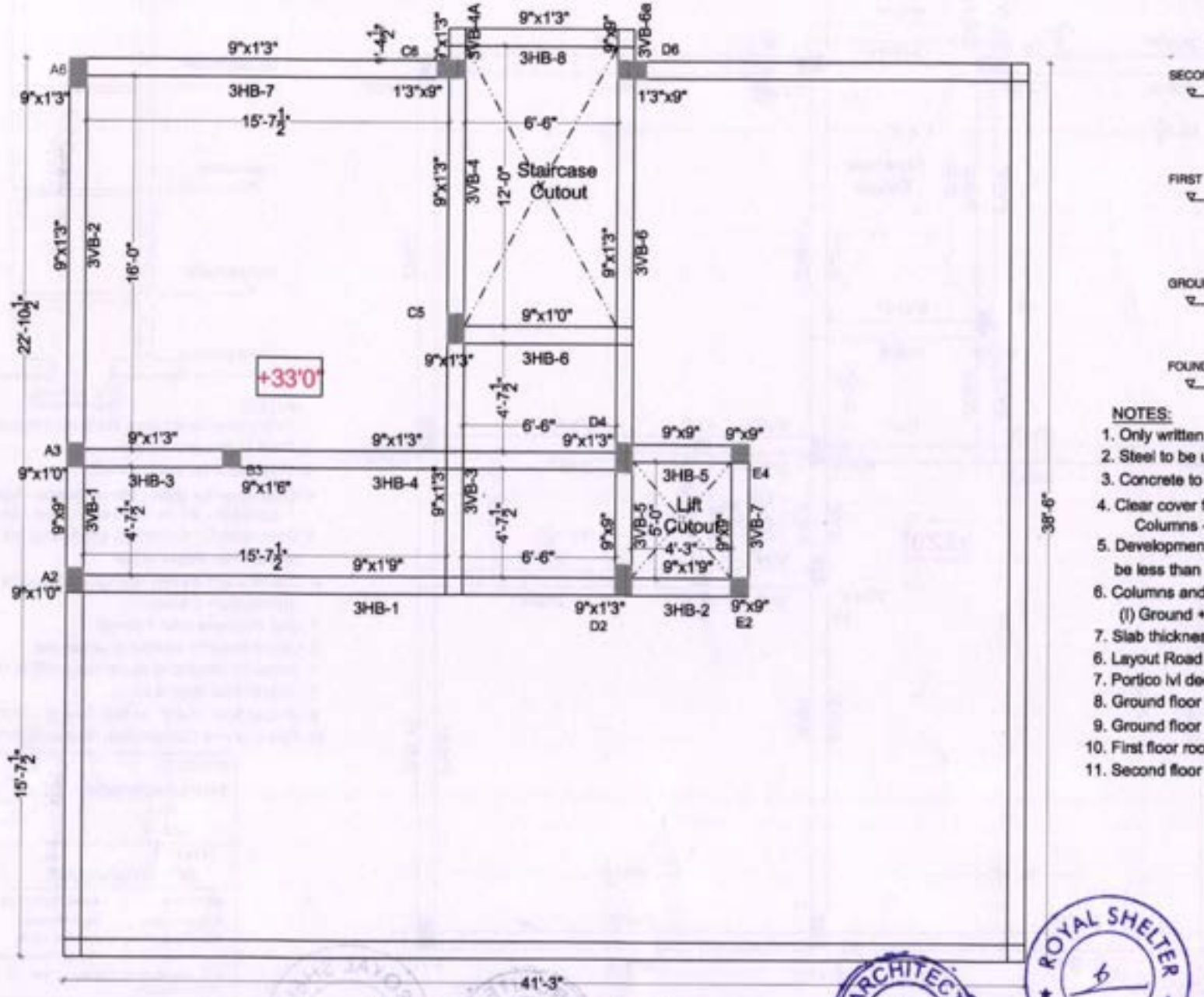
NOTES:

1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : M-25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
5. Development / Anchorage length shall not be less than 50xdia.of bar
6. Columns and column footings designed for (I) Ground + 2 floors
7. Slab thickness refer drawing.
6. Layout Road lvl decided at as per site
7. Portico lvl decided at as per site.(-1'6" to -1'9")
8. Ground floor level is ±0
9. Ground floor roof (First floor level is +11'0").

PROJECT "ROYAL KALPATARU" PH-II Unit- H1	N
TITLE GF roof Framing plan	
ARCHITECT P. Ravichandran. M.E., A.I.I.A., A.I.V. ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742466	
DESIGN : P.RAVICHANDRAN	
DRAWN : S.KALARANI	
SCALE : FIT TO A2	
DWG.NO : Str.02	
DATE : 04.03.2025	

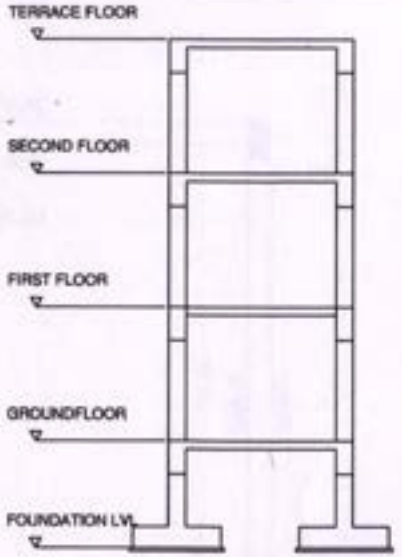
ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18



Second floor roof Framing Plan

Terrace Framing Plan



KEY SECTION

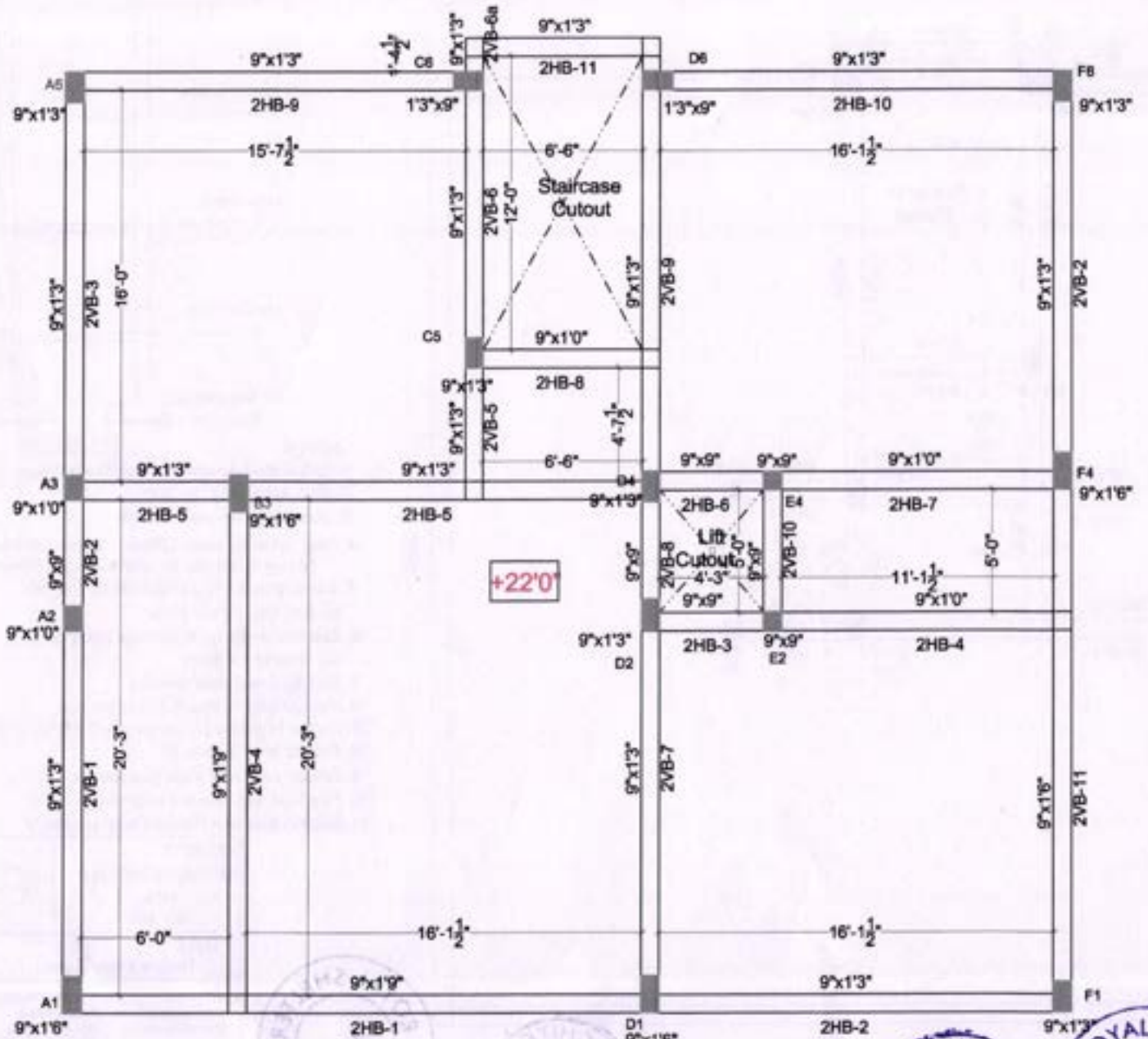
NOTES:

1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : M-25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
5. Development / Anchorage length shall not be less than 50xdia.of bar
6. Columns and column footings designed for (I) Ground + 2 floors
7. Slab thickness refer drawing.
6. Layout Road lvl decided at as per site
7. Portico lvl decided at as per site.(-1'6" to -1'9")
8. Ground floor level is ±0
9. Ground floor roof (First floor level is +11'0")
10. First floor roof (Second floor level is +22'0")
11. Second floor roof (Terrace level is +33'0")

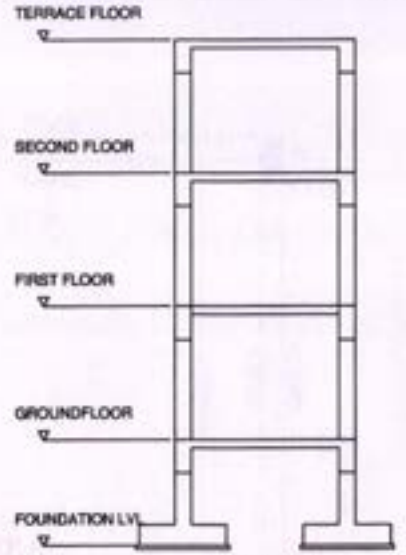
PROJECT "ROYAL KALPATARU" PH-II Unit- H1	N
TITLE Terrace Framing plan	
ARCHITECT P. Ravichandran. M.E., A.I.I.A., A.I.V., D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742466	ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants.
DESIGN : P.RAVICHANDRAN	
DRAWN : S.KALARANI	
SCALE : FIT TO A3	
DWG.NO : Str.02	
DATE 04.03.2025	

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18



First floor roof Framing Plan



KEY SECTION

NOTES:

1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : M-25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
5. Development / Anchorage length shall not be less than 50xdia.of bar
6. Columns and column footings designed for (I) Ground + 2 floors
7. Slab thickness refer drawing.
6. Layout Road lvl decided at as per site
7. Portico lvl decided at as per site.(-1'6" to -1'9")
8. Ground floor level is ±0
9. Ground floor roof (First floor level is +11'0")
10. First floor roof (Second floor level is +22'0")

PROJECT
"ROYAL KALPATARU"
PH-II
Unit- H1

N

TITLE
GF roof Framing plan

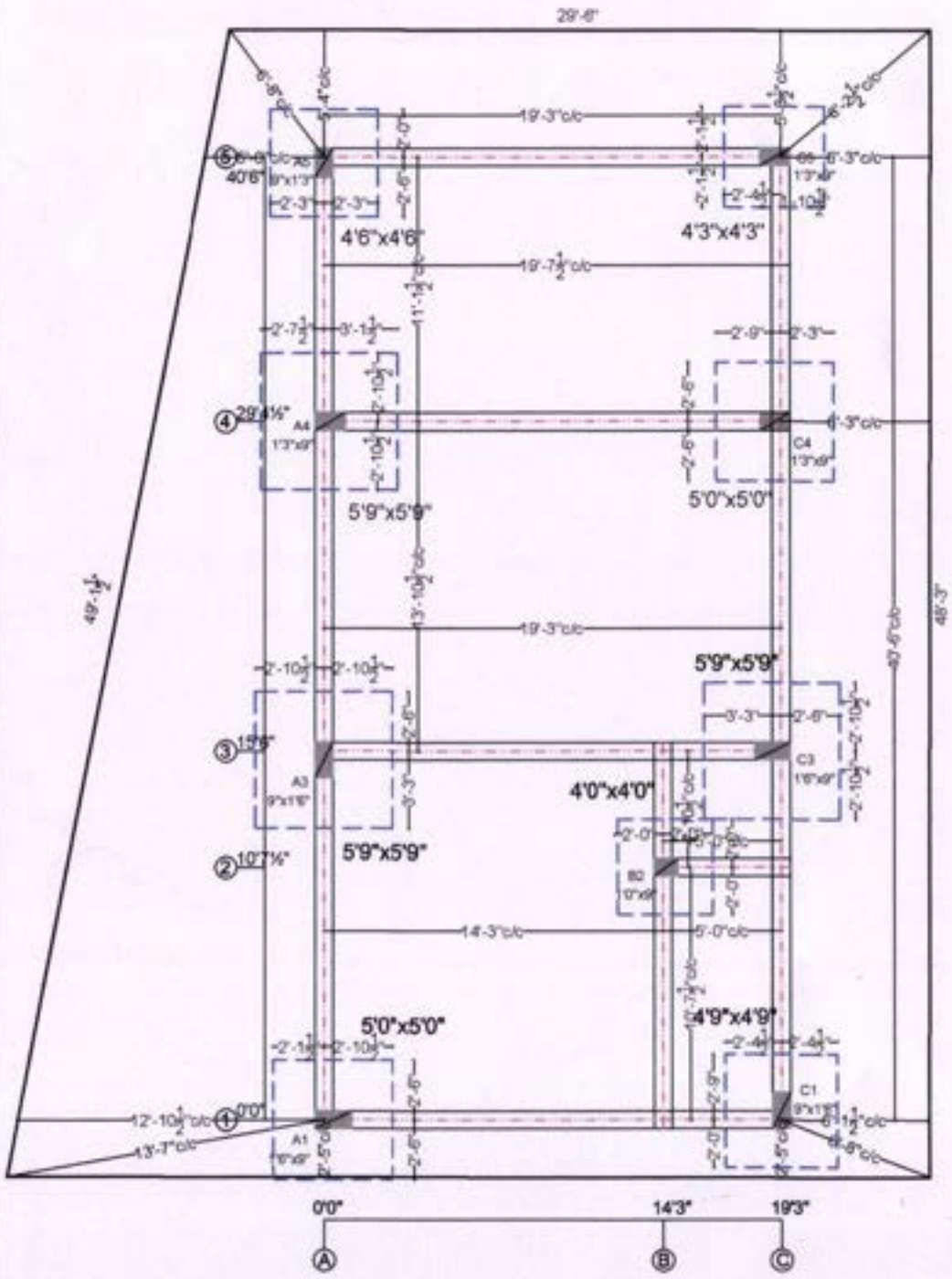
ARCHITECT
P. Ravichandran,
M.E., A.I.I.A., A.I.V.,

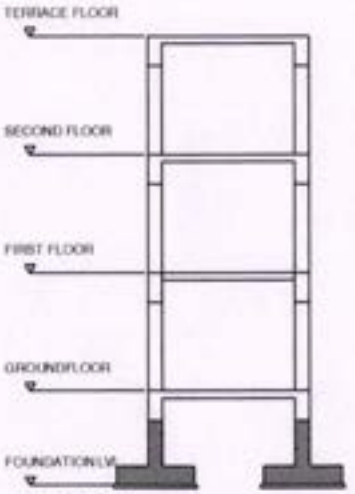
ARCHITECTS PLUS
Regd Architects
Approved valuers
Structural Consultants.
D-27, Seventh cross, Thillainagar, Trichy - 18.
Ph: 0431-2742466

DESIGN : P.RAVICHANDRAN
DRAWN : S.KALARANI
SCALE : FIT TO A2
DWG.NO : Str.02
DATE : 04.03.2025

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18





KEY SECTION

NOTES:

1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : Column M-30 & Beam M25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
5. Development / Anchorage length shall not be less than 50xdia.of bar
6. Columns and column footings designed for (I) Ground + 2 floors
7. Safe bearing capacity of soil : 250KN/m²
8. Center point of each footing should coinside with center point of corresponding column.

PROJECT "ROYAL KALPATARU" PH-II Unit- H2	N
TITLE Footing Marking detail	

ARCHITECT — ARCHITECTS PLUS
P. Ravichandran. — Regd Architects
M.E., A.I.I.A., A.I.V., — Approved valuers
Structural Consultants
D-27, Seventh cross, Thillainagar, Trichy - 18.
Ph: 0431-2742466

DESIGN	P.RAVICHANDRAN
DRAWN	S.KALARANI
SCALE	FIT TO A2
DWG.NO	Str.01
DATE	20.03.2005

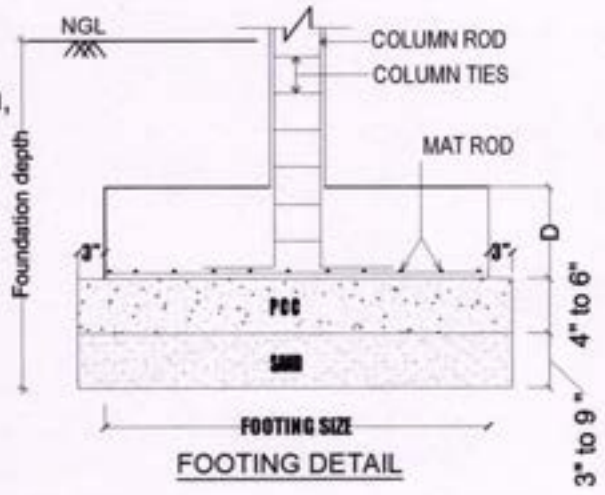
ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

SL.NO/ TYPE	COLUMNS	NOS.	PIT SIZE	FOOTING SIZE	FOOTING DEPTH D2 Over all depth	MAT ROD
1.	B2	1	4'6"x4'6"	4'0"x4'0"	1'3"	12 Ø 7" C/C bothways
2.	C5	1	4'9"x4'9"	4'3"x4'3"	1'6"	12 Ø 7" C/C bothways
3.	A5	1	5'0"x5'0"	4'6"x4'6"	1'6"	12 Ø 7" C/C bothways
4.	C1	1	5'3"x5'3"	4'9"x4'9"	1'9"	12 Ø 7" C/C bothways
5.	C4,A1	2	5'6"x5'6"	5'0"x5'0"	1'9"	12 Ø 7" C/C bothways
6.	A3,C3,A4	3	6'3"x6'3"	5'9"x5'9"	2'0"	12 Ø 7" C/C bothways
	TOTAL	9 nos.				

NOTES:

1. Only written dimensions are to be followed.
2. All Dimension are in Feet & Inches.
3. Steel to be used : Fe 500
4. Concrete to be used : M-30
5. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
6. Development / Anchorage length shall not be less than 50xdia.of bar
7. Columns and column footings designed for (I) Ground + 2 floors
8. Safe bearing capacity of soil : 250KN/m²
9. Center point of each footing should coinside with center point of corresponding column.

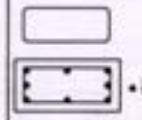
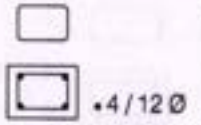
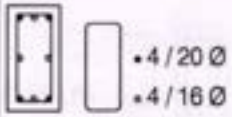
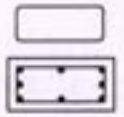
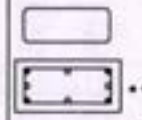
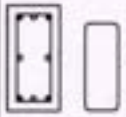
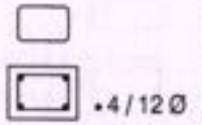
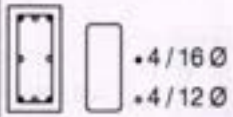
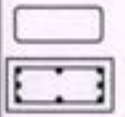
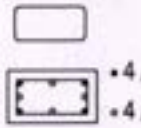
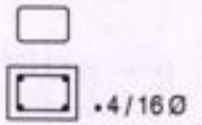
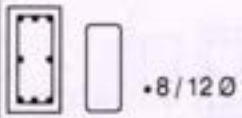
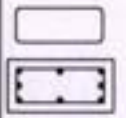
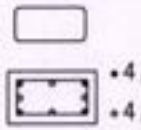
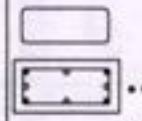
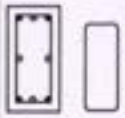
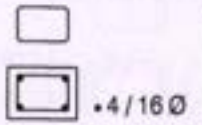
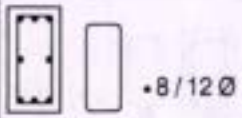
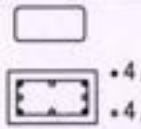


FOOTING DETAIL

PROJECT	TITLE	ARCHITECT	ARCHITECTS PLUS	DESIGN : P.RAVICHANDRAN
"ROYAL KALPATARU" PLOT-H2	FOOTING CHART	P. Ravichandran. M.E., A.I.I.A., A.I.V.,	Regd Architects Approved valuers Structural Consultants	DRAWN : S.KALARANI
		D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742486		SCALE : FIT TO A4
				DWG NO: Str.03
				DATE : 28.03.2025

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

2nd FLOOR to TERRACE FLOOR	 •8/16Ø	 •4/16Ø •4/12Ø	 •4/12Ø	 •4/20Ø •4/16Ø	 •8/12Ø	 •4/20Ø •4/16Ø
SIZE	1'6"x9"	9"x1'6"	1'0"x9"	9"x1'6"	1'6"x9"	1'3"x9"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
1st FLOOR to 2nd FLOOR	 •4/16Ø •4/12Ø	 •4/16Ø •4/12Ø	 •4/12Ø	 •4/16Ø •4/12Ø	 •8/12Ø	 •4/16Ø •4/12Ø
SIZE	1'6"x9"	9"x1'6"	1'0"x9"	9"x1'6"	1'6"x9"	1'3"x9"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
GROUND FLOOR to 1st FLOOR	 •4/16Ø •4/12Ø	 •4/16Ø •4/12Ø	 •4/16Ø	 •8/12Ø	 •8/12Ø	 •4/16Ø •4/12Ø
SIZE	1'6"x9"	9"x1'6"	1'0"x9"	9"x1'6"	1'6"x9"	1'3"x9"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
PLINTH TO GROUND FLOOR	 •4/16Ø •4/12Ø	 •4/16Ø •4/12Ø	 •4/16Ø	 •8/12Ø	 •8/12Ø	 •4/16Ø •4/12Ø
SIZE	1'6"x9"	9"x1'6"	1'0"x9"	9"x1'6"	1'6"x9"	1'3"x9"
CONCRETE GRADE/COVER	M30	M30	M30	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
COLUMN MARK	A1	C1	B2	A3	C3	A4
NOS.OF.COLUMN	01	01	01	01	01	01

NOTES:

1. Only written dimensions are to be followed.
2. All Dimension are in Feet & Inches.
3. Steel to be used : Fe 500
4. Concrete to be used : M-30
5. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
6. Development / Anchorage length shall not be less than 50xdia.of bar
7. Columns and column footings designed for (I) Ground+2 floors
8. Safe bearing capacity of soil : 250KN/m²
9. Center point of each footing should coinside with center point of corresponding column.

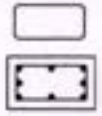
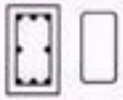
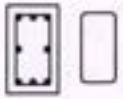
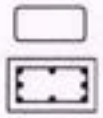
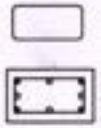
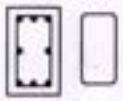
Project: "ROYAL KALPATARU" PLOT- H2	Title: Column Chart	N	ARCHITECT: P. Ravichandran, M.E., A.I.I.A., A.I.V., D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742486 ARCHITECTS PLUS: Regd Architects, Approved valuers, Structural Consultants

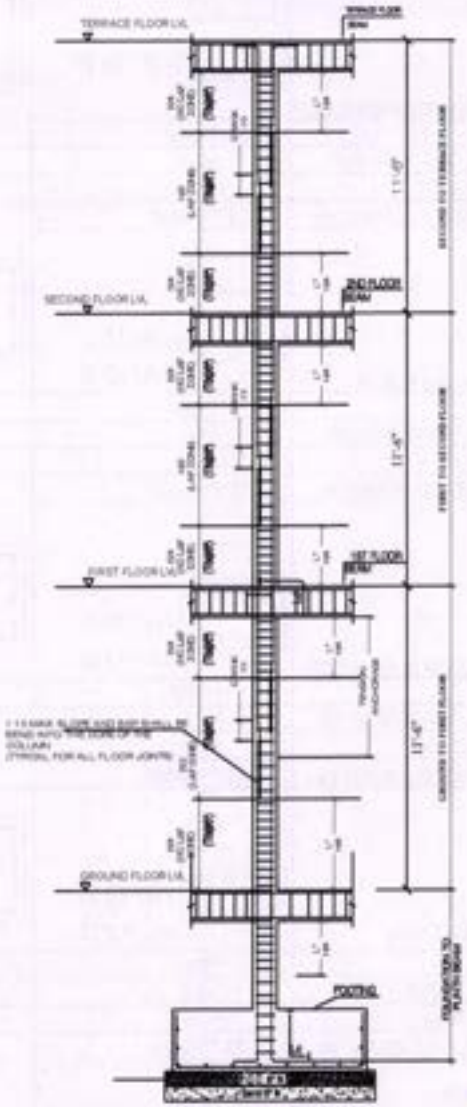
Design	P.Ravichandran
Drawn	S.Kalarani
Dwg no	Str 02
Scale	Fit to Paper
Date	24.03.2025

Sheet: 1/2

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

2nd FLOOR to TERRACE FLOOR	 •8/16Ø	 •8/16Ø	 •4/16Ø •4/12Ø
SIZE	1'3"x9"	9"x1'3"	1'3"x9"
CONCRETE GRADE/COVER	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
1st FLOOR to 2nd FLOOR	 •8/12Ø	 •8/16Ø	 •4/16Ø •4/12Ø
SIZE	1'3"x9"	9"x1'3"	1'3"x9"
CONCRETE GRADE/COVER	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
GROUND FLOOR to 1st FLOOR	 •8/12Ø	 •8/16Ø	 •4/16Ø •4/12Ø
SIZE	1'3"x9"	9"x1'3"	1'3"x9"
CONCRETE GRADE/COVER	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
PLINTH TO GROUND FLOOR	 •8/12Ø	 •8/16Ø	 •4/16Ø •4/12Ø
SIZE	1'3"x9"	9"x1'3"	1'3"x9"
CONCRETE GRADE/COVER	M30	M30	M30
STEEL GRADE Fe	Fe500	Fe500	Fe500
LINKS/TIES/STEEL GRADE Fe	T8-7"/Fe500	T8-7"/Fe500	T8-7"/Fe500
COLUMN MARK	C4	A5	C5
NOS.OF.COLUMN	01	01	01



TYPICAL ELEVATION SHOWING
RC COLUMN RODS SPLICING DETAILS

NOTES:

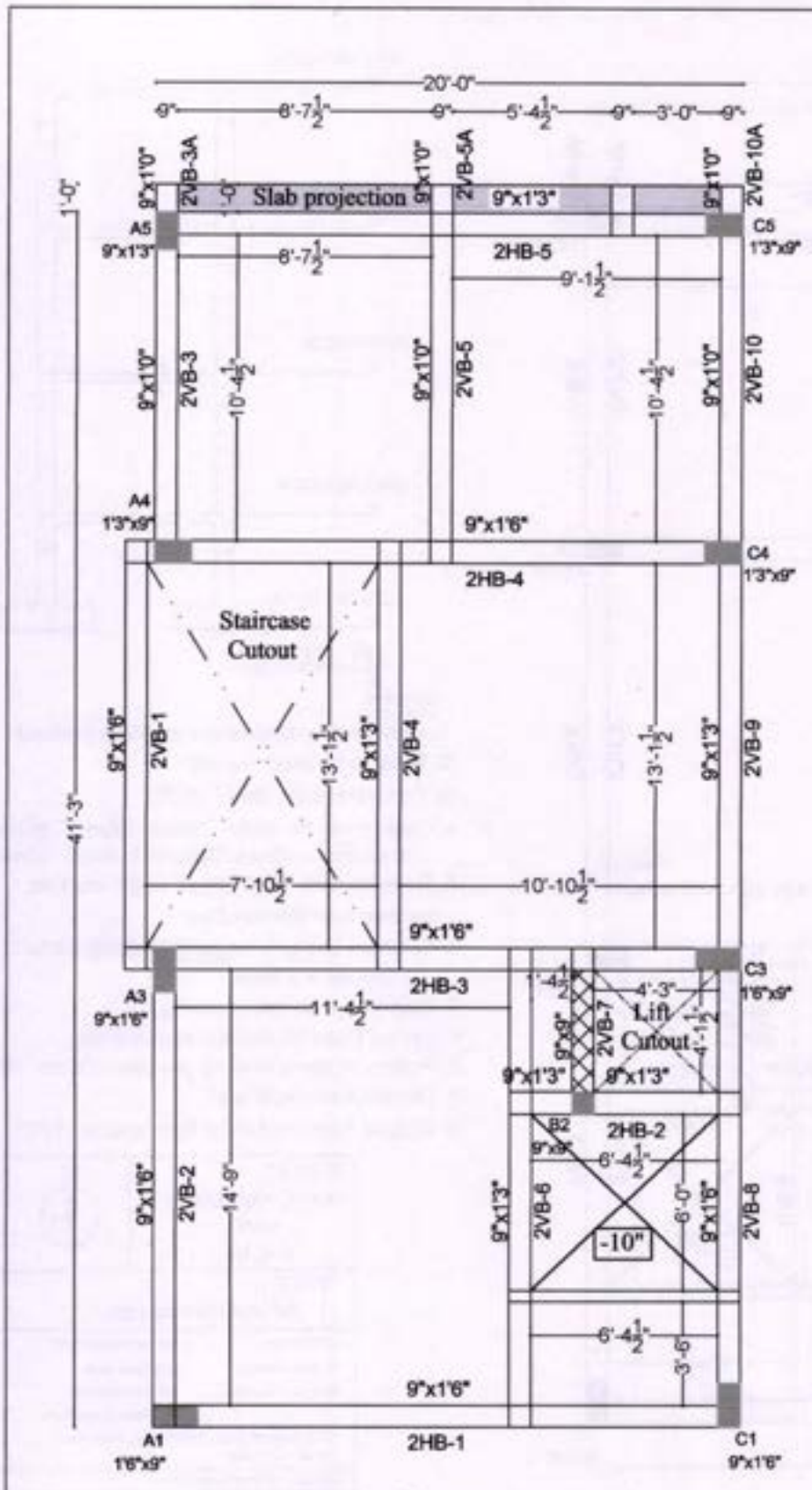
1. Only written dimensions are to be followed.
2. All Dimension are in Feet & Inches.
3. Steel to be used : Fe 500
4. Concrete to be used : M-30
5. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
6. Development / Anchorage length shall not be less than 50xdia.of bar
7. Columns and column footings designed for (I) Ground+2 floors
8. Safe bearing capacity of soil : 250KN/m²
9. Center point of each footing should coinside with center point of corresponding column.

ARCHITECTS PLUS TRICHY

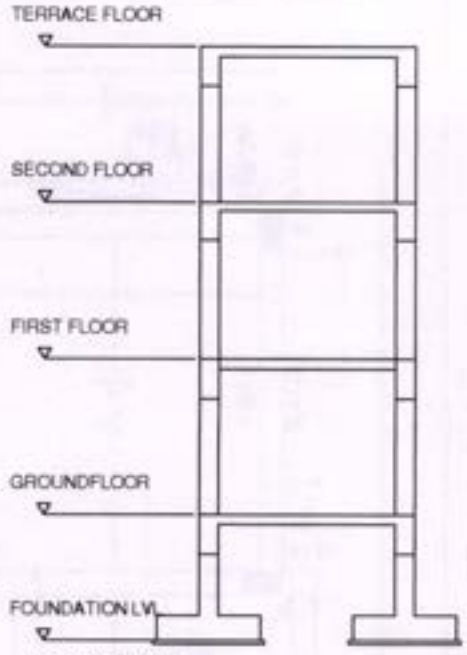
ROYAL SHELTER TRICHY-18

Sheet 1/2

Project: *ROYAL KALPATARU PLOT- H2	Title: Column Chart	N	ARCHITECT: P. Ravichandran, M.E., A.I.I.A., A.I.V., D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742488 / ARCHITECTS PLUS, Regd Architects, Approved valuers, Structural Consultants.	Design : P.Ravichandran; Drawn : S.Kalairani; Dwg.no : Str.02; Scale : Fit to Paper; Date : 24.03.2025



FIRST FLOOR ROOF FRAMING PLAN



KEY SECTION

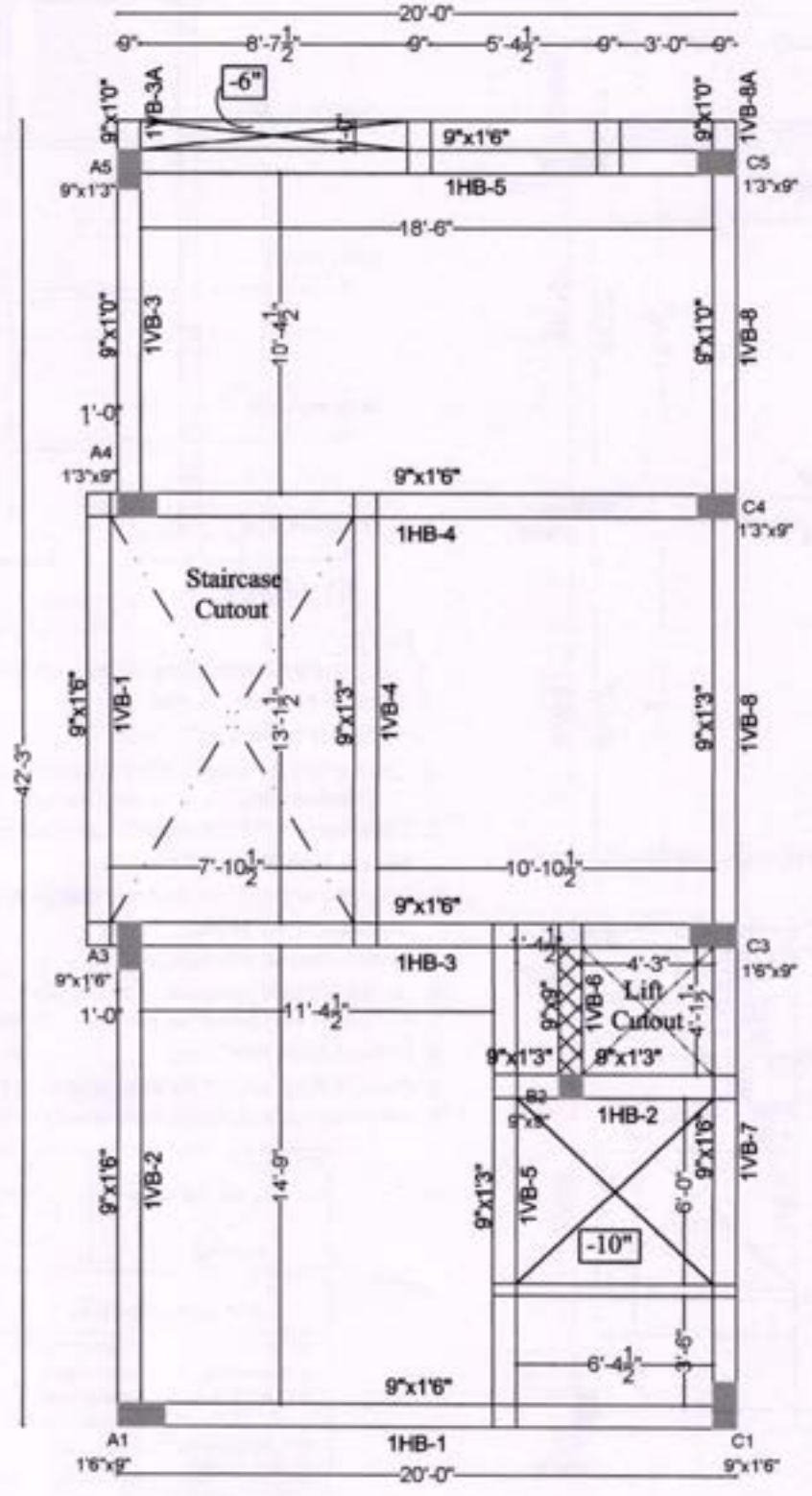
NOTES:

1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : M-25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
5. Development / Anchorage length shall not be less than 50xdia.of bar
6. Columns and column footings designed for (I) Ground + 2 floors
7. Slab thickness refer drawing.
6. Layout Road lvl decided at as per site
7. Portico lvl decided at as per site.(-1'6" to -1'9")
8. Ground floor level is ±0
9. Ground floor roof (First floor level is +11'0")
10. First floor roof (Second floor level is +22'0")

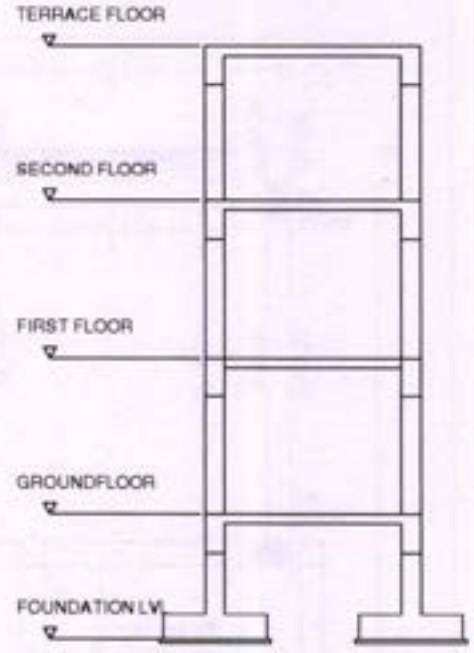
PROJECT "ROYAL KALPATARU" PH-II Unit- H2	N
TITLE GF roof Framing plan	
ARCHITECT P. Ravichandran. M.E., A.I.I.A., A.I.V., ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742466	
DESIGN : P.RAVICHANDRAN	
DRAWN : S.KALARANI	
SCALE : FIT TO A2	
DWG.NO : Str.02	
DATE : 20.03.2025	

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18



GROUND FLOOR ROOF FRAMING PLAN



KEY SECTION

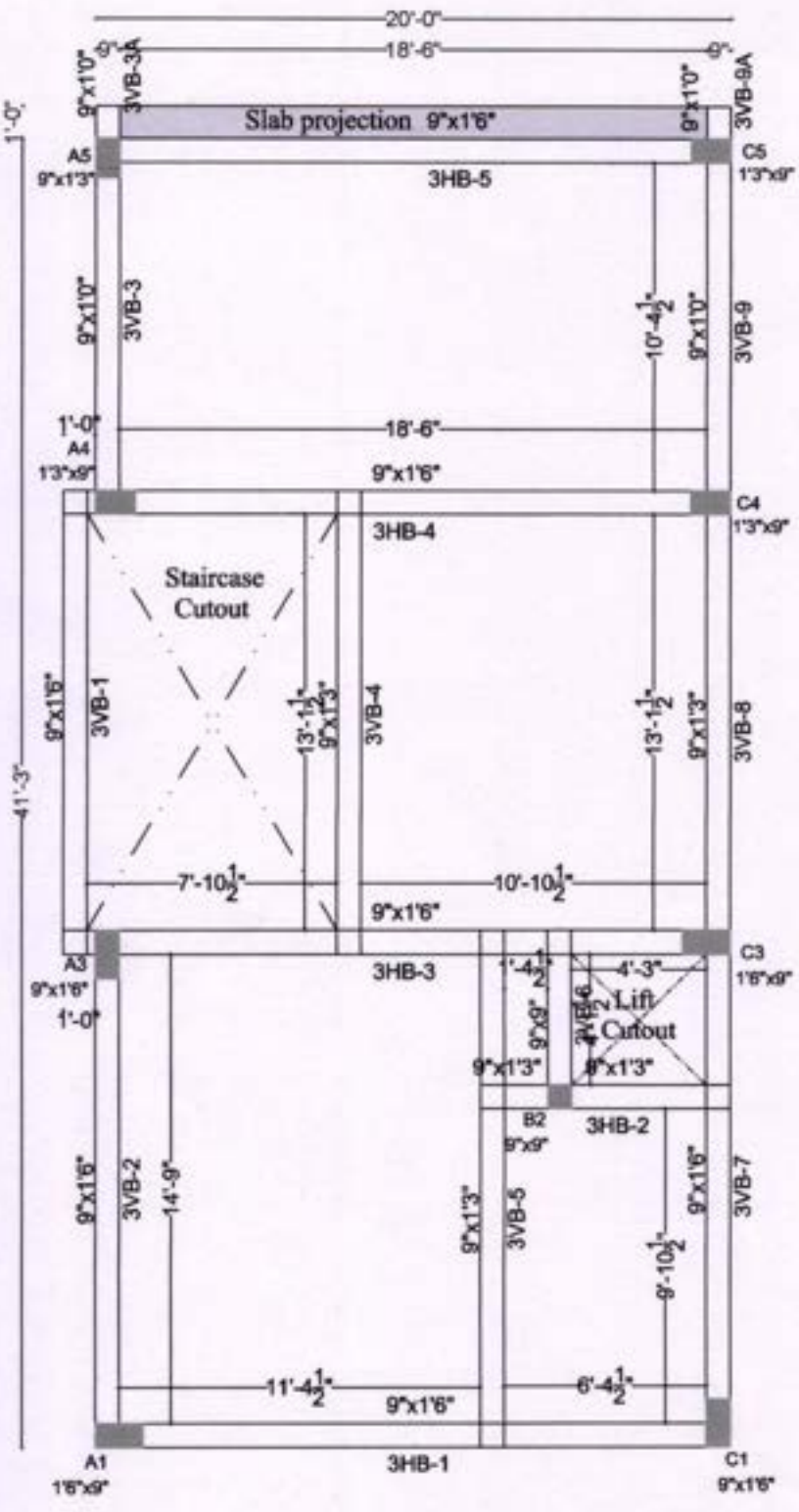
NOTES:

1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : M-25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
5. Development / Anchorage length shall not be less than 50xdia.of bar
6. Columns and column footings designed for (I) Ground + 2 floors
7. Slab thickness refer drawing.
6. Layout Road lvl decided at as per site
7. Portico lvl decided at as per site.(-1'6" to -1'9")
8. Ground floor level is ±0
9. Ground floor roof (First floor level is +11'0")

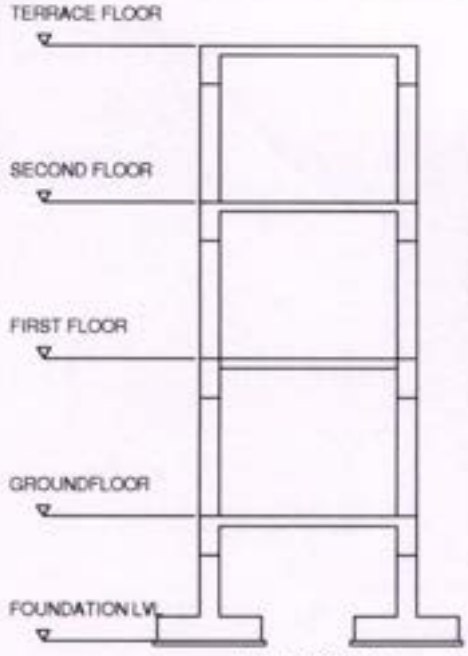
PROJECT "ROYAL KALPATARU" PH-II Unit- H2	N
TITLE GF roof Framing plan	
ARCHITECT P. Ravichandran. M.E., A.I.I.A., A.I.V., D-27, Seventh cross, Thillainagar, Trichy - 18. Ph: 0431-2742466	ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants.
DESIGN : P.RAVICHANDRAN	
DRAWN : S.KALARANI	
SCALE : FIT TO A2	
DWG.NO : Str.02	
DATE : 20.03.2025	

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18



TERRACE FRAMING PLAN



KEY SECTION

NOTES:

1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : M-25
4. Clear cover for slabs - 25mm, Beams - 30mm, Columns - 40mm, Column footings - 50mm.
5. Development / Anchorage length shall not be less than 50xdia.of bar
6. Columns and column footings designed for (I) Ground + 2 floors
7. Slab thickness refer drawing.
6. Layout Road lvl decided at as per site
7. Portico lvl decided at as per site.(-1'6" to -1'9")
8. Ground floor level is ±0
9. Ground floor roof (First floor level is +11'0")
10. First floor roof (Second floor level is +22'0")
10. Second floor roof (Terrace level is +33'0")

PROJECT "ROYAL KALPATARU" PH-II Unit- H2	N
TITLE GF roof Framing plan	

ARCHITECT P. Ravichandran M.E., A.I.I.A., A.I.V.,	ARCHITECTS PLUS Regd Architects Approved valuers Structural Consultants

D-27, Seventh cross, Thillainagar, Trichy - 18.
Ph: 0431-2742466

DESIGN :	P.RAVICHANDRAN
DRAWN :	S.KALARANI
SCALE :	FIT TO A2
DWG.NO :	Str.02
DATE :	20.03.2025

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

ANNEXURE-B

STAAD.Pro SUMMARY REPORT & MODEL PLOTS

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

```
STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 14-Dec-24
JOB NAME Royal Kalpataru H1-H2
JOB CLIENT M/s.Royal Shelter
ENGINEER NAME P.Ravichandran
END JOB INFORMATION
INPUT WIDTH 79
UNIT METER KN
JOINT COORDINATES
1 0 0 0; 2 2.06 0 0; 3 7.2 0 0; 4 12.35 0 0; 7 0 0 -4.77; 8 7.2 0 -4.77;
9 8.73 0 -4.77; 10 12.35 0 -4.77; 11 0 0 -6.32; 12 2.06 0 -6.32;
13 7.2 0 -6.32; 14 8.73 0 -6.32; 15 12.35 0 -6.32; 16 0 0 -7.84;
18 4.99 0 -7.84; 19 7.2 0 -7.84; 20 0 0 -11.31; 21 4.99 0 -11.31;
22 7.2 0 -11.31; 23 12.35 0 -11.31; 24 4.99 0 -11.79; 25 7.2 0 -11.79;
26 0 -1 0; 27 7.2 -1 0; 28 12.35 -1 0; 29 0 -1 -4.77; 30 7.2 -1 -4.77;
31 8.73 -1 -4.77; 32 0 -1 -6.32; 33 2.06 -1 -6.32; 34 7.2 -1 -6.32;
35 8.73 -1 -6.32; 36 12.35 -1 -6.32; 37 4.99 -1 -7.84; 38 0 -1 -11.31;
39 4.99 -1 -11.31; 40 7.2 -1 -11.31; 41 12.35 -1 -11.31; 42 0 3.5 0;
43 2.06 3.5 0; 44 7.2 3.5 0; 45 12.35 3.5 0; 46 2.06 3.5 -1.68;
47 7.2 3.5 -1.68; 48 0 3.5 -4.77; 49 7.2 3.5 -4.77; 50 8.73 3.5 -4.77;
51 12.35 3.5 -4.77; 52 0 3.5 -6.32; 53 2.06 3.5 -6.32; 54 7.2 3.5 -6.32;
55 8.73 3.5 -6.32; 56 12.35 3.5 -6.32; 57 0 3.5 -7.84; 58 2.06 3.5 -7.84;
59 4.99 3.5 -7.84; 60 7.2 3.5 -7.84; 61 0 3.5 -11.31; 62 4.99 3.5 -11.31;
63 7.2 3.5 -11.31; 64 12.35 3.5 -11.31; 65 4.99 3.5 -11.79; 66 7.2 3.5 -11.79;
67 0 6.85 0; 68 2.06 6.85 0; 69 7.2 6.85 0; 70 12.35 6.85 0; 73 0 6.85 -4.77;
75 8.73 6.85 -4.77; 76 12.35 6.85 -4.77; 80 8.73 6.85 -6.32;
81 12.35 6.85 -6.32; 84 4.99 6.85 -7.84; 85 7.2 6.85 -7.84; 86 0 6.85 -11.31;
87 4.99 6.85 -11.31; 88 7.2 6.85 -11.31; 89 12.35 6.85 -11.31;
90 4.99 6.85 -11.79; 91 7.2 6.85 -11.79; 98 0 10.2 -4.77; 99 7.2 10.2 -4.77;
100 8.73 10.2 -4.77; 104 7.2 10.2 -6.32; 105 8.73 10.2 -6.32;
109 4.99 10.2 -7.84; 110 7.2 10.2 -7.84; 111 0 10.2 -11.31;
112 4.99 10.2 -11.31; 113 7.2 10.2 -11.31; 115 4.99 10.2 -11.79;
116 7.2 10.2 -11.79; 117 4.99 0 -6.32; 120 7.2 6.85 -4.77; 122 0 6.85 -6.32;
123 2.06 6.85 -6.32; 125 7.2 6.85 -6.32; 126 4.99 6.85 -6.32; 128 0 10.2 -6.32;
129 2.06 10.2 -6.32; 131 4.99 10.2 -4.77; 132 4.99 10.2 -6.32;
133 2.06 6.85 -4.77;
MEMBER INCIDENCES
1 26 1; 2 27 3; 3 28 4; 4 29 7; 5 30 8; 6 31 9; 7 32 11; 8 33 12; 9 34 13;
10 35 14; 11 36 15; 12 37 18; 13 38 20; 14 39 21; 15 40 22; 16 41 23; 17 1 2;
18 2 3; 19 3 4; 21 8 9; 22 9 10; 23 13 14; 24 14 15; 27 18 19; 28 20 21;
29 22 23; 30 24 25; 31 1 7; 32 7 11; 33 11 16; 34 16 20; 36 2 12; 38 18 21;
39 21 24; 41 3 8; 42 8 13; 43 13 19; 44 19 22; 45 22 25; 46 9 14; 47 4 10;
48 10 15; 49 15 23; 101 1 42; 102 3 44; 103 4 45; 104 7 48; 105 8 49; 106 9 50;
107 11 52; 108 12 53; 109 13 54; 110 14 55; 111 15 56; 112 18 59; 113 20 61;
114 21 62; 115 22 63; 116 23 64; 201 42 67; 202 44 69; 203 45 70; 204 48 73;
205 49 120; 206 50 75; 207 52 122; 208 53 123; 209 54 125; 210 55 80;
211 56 81; 212 59 84; 213 61 86; 214 62 87; 215 63 88; 216 64 89; 225 11 12;
226 21 22; 227 12 117; 228 117 13; 229 117 18; 304 73 98; 305 120 99;
306 75 100; 307 122 128; 308 123 129; 309 125 104; 310 80 105; 312 84 109;
313 86 111; 314 87 112; 315 88 113; 1001 42 43; 1002 43 44; 1003 44 45;
1004 46 47; 1005 49 50; 1006 50 51; 1007 54 55; 1008 55 56; 1009 57 58;
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1016 48 52; 1017 52 57; 1018 57 61; 1019 43 46; 1020 46 53; 1021 53 58;
```

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

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1022 59 62; 1023 62 65; 1024 44 47; 1025 47 49; 1026 49 54; 1027 54 60;
1028 60 63; 1029 63 66; 1030 50 55; 1031 45 51; 1032 51 56; 1033 56 64;
1034 67 68; 1035 68 69; 1036 69 70; 1038 120 75; 1039 75 76; 1040 125 80;
1041 80 81; 1042 122 123; 1043 123 126; 1044 126 125; 1045 86 87; 1046 88 89;
1047 90 91; 1048 67 73; 1049 122 86; 1052 126 84; 1053 84 87; 1054 87 90;
1056 69 120; 1057 125 85; 1058 85 88; 1059 88 91; 1060 75 80; 1061 70 76;
1062 76 81; 1063 81 89; 1064 99 100; 1065 104 105; 1066 128 129; 1067 129 132;
1068 109 110; 1069 111 112; 1070 115 116; 1071 98 128; 1072 128 111;
1073 132 109; 1074 109 112; 1075 112 115; 1076 99 104; 1077 104 110;
1078 110 113; 1079 113 116; 1080 100 105; 1083 73 122; 1084 68 133;
1085 120 125; 1086 131 132; 1087 98 131; 1088 84 85; 1091 131 99; 1092 133 123;
1093 73 133; 1095 133 120;
DEFINE MATERIAL START
ISOTROPIC CONCRETE
E 2.17185e+007
POISSON 0.17
DENSITY 23.5616
ALPHA 1e-005
DAMP 0.05
TYPE CONCRETE
STRENGTH FCU 27579
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
6 10 21 23 32 42 46 106 110 206 210 225 229 306 308 310 1005 1007 1016 1021 -
1026 1038 1040 1060 1064 1065 1071 1076 1080 1083 -
1085 PRIS YD 0.23 ZD 0.23
4 7 104 107 204 207 304 307 PRIS YD 0.23 ZD 0.3
3 5 9 12 13 16 103 105 109 112 113 116 203 205 209 212 213 216 305 309 312 -
313 PRIS YD 0.23 ZD 0.38
8 11 108 111 208 211 PRIS YD 0.23 ZD 0.46
22 24 27 30 38 39 226 1006 1008 1011 1030 1039 1041 1068 -
1088 PRIS YD 0.3 ZD 0.23
14 15 19 28 29 31 33 34 41 43 TO 45 49 114 115 214 215 227 228 314 315 1003 -
1004 1009 1010 1012 TO 1015 1017 1018 1022 TO 1025 1027 TO 1029 1033 1036 -
1042 TO 1049 1052 TO 1054 1056 TO 1059 1063 1066 1067 1069 1070 1072 TO 1075 -
1077 TO 1079 1086 1093 1095 PRIS YD 0.38 ZD 0.23
1 2 47 48 101 102 201 202 1031 1032 1061 1062 PRIS YD 0.46 ZD 0.23
17 18 36 1001 1002 1019 1020 1034 1035 1084 1087 1091 1092 PRIS YD 0.53 ZD 0.23
CONSTANTS
MATERIAL CONCRETE ALL
SUPPORTS
26 TO 41 PINNED
MEMBER RELEASE
1002 1004 1009 1010 1014 1018 TO 1020 1025 1028 1032 1035 1044 1047 1052 1058 -
1062 1070 1073 1078 1084 1086 1091 1092 1095 START MX
1001 1004 1006 1009 1011 1014 1017 1019 1021 1023 1024 1027 1029 1031 1034 -
1039 1043 1047 1054 1057 1059 1061 1067 1068 1070 1075 1077 1079 1084 1086 -
1087 TO 1088 1093 END MX
LOAD 1 LOADTYPE Dead  TITLE LOAD CASE 1 SELF WEIGHT
SELFWEIGHT Y -1
LOAD 2 LOADTYPE Dead  TITLE LOAD CASE 2 DEAD LOAD
FLOOR LOAD
YRANGE 3.5 3.5 FLOAD -5 XRANGE 0 12.35  ZRANGE -11.79 0  GY
YRANGE 6.85 6.85 FLOAD -5 XRANGE 0 8.73  ZRANGE -11.79 -4.77  GY
```

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

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YRANGE 6.85 6.85 FLOAD -5.5 XRANGE 0 12.35  ZRANGE -4.77 0  GY
YRANGE 6.85 6.85 FLOAD -5.5 XRANGE 8.73 12.35  ZRANGE -6.32 -4.77  GY
YRANGE 6.85 6.85 FLOAD -5.5 XRANGE 7.2 12.35  ZRANGE -11.31 -6.32  GY
YRANGE 10.2 10.2 FLOAD -5.5 XRANGE 0 8.73  ZRANGE -11.79 -4.77  GY
LOAD 3 LOADTYPE Dead  TITLE LOAD CASE 3 DEAD LOAD CUTOUT
FLOOR LOAD
YRANGE 3.5 6.85 FLOAD 5 XRANGE 7.2 8.73  ZRANGE -6.32 -4.77  GY
YRANGE 10.2 10.2 FLOAD 5.5 XRANGE 7.2 8.73  ZRANGE -6.32 -4.77  GY
YRANGE 3.5 6.85 FLOAD 5 XRANGE 4.99 7.2  ZRANGE -11.79 -7.84  GY
YRANGE 10.2 10.2 FLOAD 5.5 XRANGE 4.99 7.2  ZRANGE -11.79 -7.84  GY
LOAD 4 LOADTYPE Live  TITLE LOAD CASE 4 LIVE LOAD
FLOOR LOAD
YRANGE 3.5 3.5 FLOAD -2 XRANGE 0 12.35  ZRANGE -11.79 0  GY
YRANGE 6.85 6.85 FLOAD -2 XRANGE 0 8.73  ZRANGE -11.79 -4.77  GY
YRANGE 6.85 6.85 FLOAD -1.5 XRANGE 0 12.35  ZRANGE -4.77 0  GY
YRANGE 6.85 6.85 FLOAD -1.5 XRANGE 8.73 12.35  ZRANGE -6.32 -4.77  GY
YRANGE 6.85 6.85 FLOAD -1.5 XRANGE 7.2 12.35  ZRANGE -11.31 -6.32  GY
YRANGE 10.2 10.2 FLOAD -1.5 XRANGE 0 8.73  ZRANGE -11.79 -4.77  GY
LOAD 5 LOADTYPE Live  TITLE LOAD CASE 5 LIVE LOAD CUTOUT
FLOOR LOAD
YRANGE 3.5 6.85 FLOAD 2 XRANGE 7.2 8.73  ZRANGE -6.32 -4.77  GY
YRANGE 10.2 10.2 FLOAD 1.5 XRANGE 7.2 8.73  ZRANGE -6.32 -4.77  GY
YRANGE 3.5 6.85 FLOAD 2 XRANGE 4.99 7.2  ZRANGE -11.79 -7.84  GY
YRANGE 10.2 10.2 FLOAD 1.5 XRANGE 4.99 7.2  ZRANGE -11.79 -7.84  GY
LOAD 6 LOADTYPE Live  TITLE LOAD CASE 6 WALL LOAD
MEMBER LOAD
1002 1003 1005 1007 1012 TO 1018 1023 1026 1029 TO 1033 1038 1040 1045 1047 -
1049 1054 1057 TO 1060 1083 1085 UNI GY -14.5
1004 1006 1008 TO 1010 1020 TO 1022 1024 1025 1027 1028 1042 1043 1052 1053 -
1084 1092 1093 UNI GY -7.5
1001 1034 TO 1036 1046 1048 1061 TO 1065 1069 1071 1072 1077 1080 1087 -
1091 UNI GY -5.6
1068 1070 1074 1075 1078 UNI GY -11.5
LOAD 7 LOADTYPE Live  TITLE LOAD CASE 7 SLAB LOAD
MEMBER LOAD
1011 1014 1047 UNI GY -21.5
1088 UNI GY -21.5 1.105 2.21
LOAD COMB 8 COMBINATION LOAD CASE 8
1 1.0 2 1.5 3 1.5 4 1.5 5 1.5 6 1.5 7 1.5
PERFORM ANALYSIS
LOAD LIST 8
START CONCRETE DESIGN
CODE INDIAN
CLEAR 0.04 MEMB 1 TO 16 101 TO 116 201 TO 216 304 TO 310 312 TO 315
CLEAR 0.03 MEMB 17 TO 19 21 TO 24 27 TO 34 38 39 41 TO 49 225 227 TO 229 1001 -
1002 TO 1036 1038 TO 1049 1052 TO 1054 1056 TO 1080 1083 TO 1088 1091 TO 1093 -
1095
ELY 0.7 MEMB 1 TO 16 101 TO 116 201 TO 216 304 TO 310 312 TO 315
ELZ 0.7 MEMB 1 TO 16 101 TO 116 201 TO 216 304 TO 310 312 TO 315
FC 30000 MEMB 1 TO 16 101 TO 116 201 TO 216 304 TO 310 312 TO 315
FC 25000 MEMB 17 TO 19 21 TO 24 27 TO 34 38 39 41 TO 49 225 227 TO 229 1001 -
1002 TO 1036 1038 TO 1049 1052 TO 1054 1056 TO 1080 1083 TO 1088 1091 TO 1093 -
1095
FYMAIN 500000 MEMB 1 TO 19 21 TO 24 27 TO 34 38 39 41 TO 49 101 TO 116 201 -
```

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

```
202 TO 216 225 227 TO 229 304 TO 310 312 TO 315 1001 TO 1036 1038 TO 1049 -
1052 TO 1054 1056 TO 1080 1083 TO 1088 1091 TO 1093 1095
FYSEC 500000 MEMB 1 TO 19 21 TO 24 27 TO 34 38 39 41 TO 49 101 TO 116 201 -
202 TO 216 225 227 TO 229 304 TO 310 312 TO 315 1001 TO 1036 1038 TO 1049 -
1052 TO 1054 1056 TO 1080 1083 TO 1088 1091 TO 1093 1095
MAXMAIN 25 MEMB 1 TO 19 21 TO 24 27 TO 34 38 39 41 TO 49 101 TO 116 -
201 TO 216 225 227 TO 229 304 TO 310 312 TO 315 1001 TO 1036 1038 TO 1049 -
1052 TO 1054 1056 TO 1080 1083 TO 1088 1091 TO 1093 1095
MAXSEC 8 MEMB 1 TO 19 21 TO 24 27 TO 34 38 39 41 TO 49 101 TO 116 201 TO 216 -
225 227 TO 229 304 TO 310 312 TO 315 1001 TO 1036 1038 TO 1049 1052 TO 1054 -
1056 TO 1080 1083 TO 1088 1091 TO 1093 1095
MINMAIN 10 MEMB 1 TO 19 21 TO 24 27 TO 34 38 39 41 TO 49 101 TO 116 -
201 TO 216 225 227 TO 229 304 TO 310 312 TO 315 1001 TO 1036 1038 TO 1049 -
1052 TO 1054 1056 TO 1080 1083 TO 1088 1091 TO 1093 1095
MINSEC 8 MEMB 1 TO 19 21 TO 24 27 TO 34 38 39 41 TO 49 101 TO 116 201 TO 216 -
225 227 TO 229 304 TO 310 312 TO 315 1001 TO 1036 1038 TO 1049 1052 TO 1054 -
1056 TO 1080 1083 TO 1088 1091 TO 1093 1095
ENSH 1 MEMB 17 TO 19 21 TO 24 27 TO 34 38 39 41 TO 49 225 TO 229 1001 TO 1036 -
1038 TO 1049 1052 TO 1054 1056 TO 1080 1083 TO 1088 1091 TO 1093 1095
RATIO 4 MEMB 1 TO 16 101 TO 116 201 TO 216 304 TO 310 312 TO 315
TRACK 2 MEMB 1 TO 19 21 TO 24 27 TO 34 38 39 41 TO 49 101 TO 116 201 TO 216 -
225 227 TO 229 304 TO 310 312 TO 315 1001 TO 1036 1038 TO 1049 1052 TO 1054 -
1056 TO 1080 1083 TO 1088 1091 TO 1093 1095
DESIGN COLUMN 1 TO 16 101 TO 116 201 TO 216 304 TO 310 312 TO 315
DESIGN BEAM 17 TO 19 21 TO 24 27 TO 34 38 39 41 TO 49 225 227 TO 229 1001 -
1002 TO 1036 1038 TO 1049 1052 TO 1054 1056 TO 1080 1083 TO 1088 1091 TO 1093 -
1095
CONCRETE TAKE
END CONCRETE DESIGN
FINISH
```

```
YRANGE 3.5 3.5 FLOAD -5 XRANGE 0 11.04  ZRANGE -12.86 0  GY
YRANGE 10.5 10.5 FLOAD -5.5 XRANGE 0 11.04  ZRANGE -12.86 -4.86  GY
YRANGE 7 7 FLOAD -5 XRANGE 0 11.04  ZRANGE -12.86 -4.86  GY
YRANGE 7 7 FLOAD -5.5 XRANGE 0 8.98  ZRANGE -4.86 0  GY
YRANGE 7 7 FLOAD -5.5 XRANGE 8.98 11.04  ZRANGE -6.69 0  GY
LOAD 3 LOADTYPE Dead  TITLE LOAD CASE 3 DEAD LOAD CUTOUT
FLOOR LOAD
YRANGE 3.5 7 FLOAD 5 XRANGE 5.53 11.04  ZRANGE -12.86 -8.9  GY
YRANGE 3.5 7 FLOAD 5 XRANGE 7.38 8.98  ZRANGE -6.69 -4.86  GY
LOAD 4 LOADTYPE Live  TITLE LOAD CASE 4 LIVE LOAD
FLOOR LOAD
YRANGE 3.5 3.5 FLOAD -2 XRANGE 0 11.04  ZRANGE -12.86 0  GY
YRANGE 10.5 10.5 FLOAD -1.5 XRANGE 0 11.04  ZRANGE -12.86 -4.86  GY
YRANGE 7 7 FLOAD -2 XRANGE 0 11.04  ZRANGE -12.86 -4.86  GY
YRANGE 7 7 FLOAD -1.5 XRANGE 0 8.98  ZRANGE -4.86 0  GY
YRANGE 7 7 FLOAD -1.5 XRANGE 8.98 11.04  ZRANGE -6.69 0  GY
LOAD 5 LOADTYPE Live  TITLE LOAD CASE 5 LIVE LOAD CUTOUT
FLOOR LOAD
YRANGE 3.5 7 FLOAD 2 XRANGE 5.53 11.04  ZRANGE -12.86 -8.9  GY
YRANGE 3.5 7 FLOAD 2 XRANGE 7.38 8.98  ZRANGE -6.69 -4.86  GY
LOAD 6 LOADTYPE Dead  TITLE LOAD CASE 6 WALL LOAD
MEMBER LOAD
1015 TO 1022 1025 TO 1027 1030 TO 1036 1042 TO 1045 1048 1049 1052 -
1054 TO 1057 1060 TO 1062 1064 TO 1066 1069 TO 1072 1077 TO 1080 1083 1129 -
1130 1132 UNI GY -14.5
1037 1050 1051 1081 1128 1133 1134 UNI GY -7.5
1103 1105 1106 1109 1114 1118 1119 1123 1125 1137 1138 UNI GY -5.6
1106 1109 1110 1115 1122 TO 1126 1141 UNI GY -11.5
LOAD 7 LOADTYPE Dead  TITLE LOAD CASE 7 SLAB LOAD
MEMBER LOAD
1028 1031 1063 1066 UNI GY -21.78
1112 UNI GY -21.78 1.25 2.51
LOAD COMB 8 COMBINATION LOAD CASE 8
1 1.0 2 1.5 3 1.5 4 1.5 5 1.5 6 1.5 7 1.5
PERFORM ANALYSIS
LOAD LIST 8
START CONCRETE DESIGN
CODE INDIAN
CLEAR 0.04 MEMB 1 TO 15 101 TO 115 201 TO 215 304 TO 314
CLEAR 0.03 MEMB 16 18 19 21 TO 32 34 TO 36 39 TO 49 1015 TO 1052 1054 TO 1057 -
1059 TO 1072 1074 TO 1081 1083 1084 1103 1105 1106 1108 TO 1112 1114 1115 -
1118 TO 1126 1128 TO 1141
ELY 0.7 MEMB 1 TO 15 101 TO 115 201 TO 215 304 TO 314
ELZ 0.7 MEMB 1 TO 15 101 TO 115 201 TO 215 304 TO 314
FC 30000 MEMB 1 TO 15 101 TO 115 201 TO 215 304 TO 314
FC 25000 MEMB 16 18 19 21 TO 32 34 TO 36 39 TO 49 1015 TO 1052 1054 TO 1057 -
1059 TO 1072 1074 TO 1081 1083 1084 1103 1105 1106 1108 TO 1112 1114 1115 -
1118 TO 1126 1128 TO 1141
FYMAIN 500000 ALL
FYSEC 500000 ALL
MAXMAIN 25 ALL
MAXSEC 8 ALL
MINMAIN 10 ALL
MINSEC 8 ALL
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ROYAL SHELTER * TRICHY-18 *

ARCHITECTS PLUS * TRICHY *

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ENSH 1 MEMB 16 18 19 21 TO 32 34 TO 36 39 TO 49 1015 TO 1052 1054 TO 1057 -
1059 TO 1072 1074 TO 1081 1083 1084 1103 1105 1106 1108 TO 1112 1114 1115 -
1118 TO 1126 1128 TO 1141
RATIO 4 MEMB 1 TO 15 101 TO 115 201 TO 215 304 TO 314
TRACK 2 ALL
DESIGN COLUMN 1 TO 15 101 TO 115 201 TO 215 304 TO 314
DESIGN BEAM 16 18 19 21 TO 32 34 TO 36 39 TO 49 1015 TO 1052 1054 TO 1057 -
1059 TO 1072 1074 TO 1081 1083 1084 1103 1105 1106 1108 TO 1112 1114 1115 -
1118 TO 1126 1128 TO 1141
CONCRETE TAKE
END CONCRETE DESIGN
FINISH
```

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STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 14-Jun-25
JOB NAME Royal Kalpataru J1-J5
JOB CLIENT M/s.Royal Shelter
ENGINEER NAME P.Ravichandran
END JOB INFORMATION
INPUT WIDTH 79
UNIT METER KN
JOINT COORDINATES
1 0 0 0; 2 5.53 0 0; 3 11.04 0 0; 7 0 0 -4.86; 10 7.38 0 -4.86;
11 8.98 0 -4.86; 12 11.04 0 -4.86; 13 5.53 0 -6.69; 14 7.38 0 -6.69;
15 8.98 0 -6.69; 16 11.04 0 -6.69; 17 0 0 -8.9; 18 5.53 0 -8.9; 19 8.04 0 -8.9;
20 11.04 0 -8.9; 21 0 0 -12.86; 22 5.53 0 -12.86; 23 8.04 0 -12.86;
24 11.04 0 -12.86; 25 0 -1 0; 26 5.53 -1 0; 27 11.04 -1 0; 28 0 -1 -4.86;
29 5.53 -1 -4.86; 30 8.98 -1 -4.86; 31 7.38 -1 -6.69; 32 0 -1 -8.9;
33 5.53 -1 -8.9; 34 11.04 -1 -8.9; 35 0 -1 -12.86; 36 5.53 -1 -12.86;
37 8.04 -1 -12.86; 38 11.04 -1 -12.86; 39 0 3.5 0; 40 5.53 3.5 0;
41 11.04 3.5 0; 42 0 3.5 -4.86; 43 7.38 3.5 -4.86; 44 8.98 3.5 -4.86;
45 7.38 3.5 -6.69; 46 11.04 3.5 -6.69; 47 0 3.5 -8.9; 48 5.53 3.5 -8.9;
49 11.04 3.5 -8.9; 50 0 3.5 -12.86; 51 5.53 3.5 -12.86; 52 8.04 3.5 -12.86;
53 0 7 0; 54 5.53 7 0; 55 11.04 7 0; 56 0 7 -4.86; 57 7.38 7 -4.86;
59 7.38 7 -6.69; 60 11.04 7 -6.69; 61 0 7 -8.9; 62 5.53 7 -8.9;
63 11.04 7 -8.9; 64 0 7 -12.86; 65 5.53 7 -12.86; 66 8.04 7 -12.86;
67 0 3.5 -1.52; 68 3.96 3.5 -1.52; 69 5.53 3.5 -1.52; 70 3.96 3.5 -4.86;
72 11.04 3.5 -4.86; 73 5.53 3.5 -6.69; 74 8.98 3.5 -6.69; 75 8.04 3.5 -8.9;
76 11.04 3.5 -12.86; 77 0 7 -1.52; 83 5.53 7 -6.69; 84 8.98 7 -6.69;
85 8.04 7 -8.9; 86 11.04 7 -12.86; 90 0 10.5 -4.86; 91 7.38 10.5 -4.86;
92 8.98 10.5 -4.86; 93 7.38 10.5 -6.69; 94 11.04 10.5 -6.69; 95 0 10.5 -8.9;
96 5.53 10.5 -8.9; 97 11.04 10.5 -8.9; 98 0 10.5 -12.86; 99 5.53 10.5 -12.86;
100 8.04 10.5 -12.86; 107 5.53 10.5 -6.69; 108 8.98 10.5 -6.69;
109 8.04 10.5 -8.9; 110 11.04 -1 -6.69; 111 8.98 7 -4.86; 113 8.98 7 0;
114 1.8 7 -4.86; 116 0 7 -7.76; 117 5.53 7 -7.76; 118 2.57 7 -4.86;
119 2.57 7 -7.76; 123 1.8 7 0; 124 1.8 7 -1.52; 125 5.53 10.5 -7.76;
126 0 10.5 -7.76; 127 2.57 10.5 -4.86; 128 2.57 10.5 -7.76; 129 5.53 0 -4.86;
130 5.53 3.5 -4.86; 131 5.53 7 -4.86; 132 5.53 10.5 -4.86;
MEMBER INCIDENCES
1 25 1; 2 26 2; 3 27 3; 4 28 7; 5 29 129; 6 30 11; 7 31 14; 8 110 16; 9 32 17;
10 33 18; 11 34 20; 12 35 21; 13 36 22; 14 37 23; 15 38 24; 16 2 3; 18 1 2;
19 7 129; 21 129 10; 22 10 11; 23 11 12; 24 13 14; 25 14 15; 26 15 16;
27 17 18; 28 18 19; 29 19 20; 30 21 22; 31 22 23; 32 23 24; 34 1 7; 35 7 17;
36 17 21; 39 2 129; 40 129 13; 41 13 18; 42 18 22; 43 10 14; 44 19 23;
45 11 15; 46 3 12; 47 12 16; 48 16 20; 49 20 24; 101 1 39; 102 2 40; 103 3 41;
104 7 42; 105 129 130; 106 11 44; 107 14 45; 108 16 46; 109 17 47; 110 18 48;
111 20 49; 112 21 50; 113 22 51; 114 23 52; 115 24 76; 201 39 53; 202 40 54;
203 41 55; 204 42 56; 205 130 131; 206 44 111; 207 45 59; 208 46 60; 209 47 61;
210 48 62; 211 49 63; 212 50 64; 213 51 65; 214 52 66; 215 76 86; 304 56 90;
305 131 132; 306 111 92; 307 59 93; 308 60 94; 309 61 95; 310 62 96; 311 63 97;
312 64 98; 313 65 99; 314 66 100; 1015 39 40; 1016 40 41; 1017 67 68;
1018 68 69; 1019 42 70; 1020 70 130; 1021 130 43; 1022 43 44; 1023 44 72;
1024 73 45; 1025 45 74; 1026 74 46; 1027 47 48; 1028 48 75; 1029 75 49;
1030 50 51; 1031 51 52; 1032 52 76; 1033 39 67; 1034 67 42; 1035 42 47;
1036 47 50; 1037 68 70; 1038 40 69; 1039 69 130; 1040 130 73; 1041 73 48;
1042 48 51; 1043 43 45; 1044 75 52; 1045 44 74; 1046 41 72; 1047 72 46;
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ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

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1048 46 49; 1049 49 76; 1050 53 123; 1051 54 113; 1052 77 124; 1054 56 114;
1055 118 131; 1056 131 57; 1057 57 111; 1059 83 59; 1060 59 84; 1061 84 60;
1062 116 119; 1063 62 85; 1064 85 63; 1065 64 65; 1066 65 66; 1067 66 86;
1068 53 77; 1069 77 56; 1070 56 116; 1071 61 64; 1072 124 114; 1074 113 111;
1075 131 83; 1076 83 117; 1077 62 65; 1078 57 59; 1079 85 66; 1080 111 84;
1081 55 60; 1083 60 63; 1084 63 86; 1103 90 127; 1105 132 91; 1106 91 92;
1108 107 93; 1109 93 108; 1110 108 94; 1111 126 128; 1112 96 109; 1114 98 99;
1115 99 100; 1118 90 126; 1119 95 98; 1120 132 107; 1121 107 125; 1122 96 99;
1123 91 93; 1124 109 100; 1125 92 108; 1126 94 97; 1128 113 55; 1129 114 118;
1130 116 61; 1131 117 62; 1132 119 117; 1133 118 119; 1134 123 54;
1135 123 124; 1136 125 96; 1137 126 95; 1138 127 132; 1139 128 125;
1140 127 128; 1141 109 97;
DEFINE MATERIAL START
ISOTROPIC CONCRETE
E 2.17185e+007
POISSON 0.17
DENSITY 23.5616
ALPHA 1e-005
DAMP 0.05
TYPE CONCRETE
STRENGTH FCU 27579
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
7 23 TO 26 43 45 48 107 207 307 1023 1024 1043 1045 1048 1059 1078 1080 1083 -
1108 TO 1110 1123 1125 1126 PRIS YD 0.23 ZD 0.23
1 9 11 12 15 101 109 111 112 115 201 209 211 212 215 309 311 -
312 PRIS YD 0.23 ZD 0.38
3 4 8 10 103 104 108 110 203 204 208 210 304 308 310 PRIS YD 0.23 ZD 0.46
6 14 21 22 31 32 36 42 44 49 106 114 206 214 306 314 1021 1022 1025 1026 1031 -
1032 1036 1037 1042 1044 1049 1052 1056 1057 1060 1061 1066 1067 1071 1072 -
1074 1077 1079 1084 1105 1106 1115 1119 1122 1124 1133 1135 -
1140 PRIS YD 0.3 ZD 0.23
2 13 19 27 TO 30 35 39 TO 41 102 113 202 213 313 1017 TO 1020 1027 TO 1030 -
1035 1038 TO 1041 1054 1055 1062 TO 1065 1070 1075 1076 1103 1111 1112 1114 -
1118 1120 1121 1129 TO 1132 1136 TO 1139 1141 PRIS YD 0.38 ZD 0.23
16 18 34 46 47 205 1015 1016 1033 1034 1046 1047 1050 1051 1068 1069 1081 -
1128 1134 PRIS YD 0.53 ZD 0.23
MEMBER PROPERTY AMERICAN
5 105 305 PRIS YD 0.46 ZD 0.23
CONSTANTS
MATERIAL CONCRETE ALL
SUPPORTS
25 TO 38 110 PINNED
MEMBER RELEASE
1017 1018 1020 1022 1024 1026 1029 1034 1037 1039 1041 1043 1044 1047 1052 -
1055 1057 1059 1061 1062 1064 1069 1072 1074 1076 1078 1079 1106 1108 1110 -
1111 1121 1123 1124 1128 TO 1141 START MX
1017 TO 1019 1021 1023 1025 1028 1033 1037 1038 1040 1045 1046 1050 TO 1052 -
1054 1056 1060 1062 1063 1068 1070 1072 1075 1076 1080 1103 1105 1109 1111 -
1112 1118 1120 1121 1125 1129 1132 1133 1135 1139 1140 END MX
LOAD 1 LOADTYPE None  TITLE LOAD CASE 1 SELF WEIGHT
SELFWEIGHT Y -1
LOAD 2 LOADTYPE Dead  TITLE LOAD CASE 2 DEAD LOAD
FLOOR LOAD
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ROYAL SHELTER TRICHY-18

ARCHITECTS PLC TRICHY SCS

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STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 11-Mar-25
JOB NAME Royal Kalpataru K1-K2
JOB CLIENT M/s.Royal Shelter
ENGINEER NAME P.Ravichandran
END JOB INFORMATION
INPUT WIDTH 79
UNIT METER KN
JOINT COORDINATES
1 0 0 0; 2 5.76 0 0; 4 0 0 -1.87; 5 4.23 0 -1.87; 6 5.76 0 -1.87;
7 4.23 0 -3.62; 8 5.76 0 -3.62; 9 7.25 0 -3.62; 10 11.17 0 -3.62;
11 11.48 0 -3.62; 12 0 0 -5.03; 15 5.76 0 -5.83; 16 7.25 0 -5.83;
18 11.17 0 -5.83; 19 11.48 0 -5.83; 21 5.76 0 -9.07; 22 0 0 -10.82;
23 5.76 0 -10.82; 25 11.17 0 -10.82; 26 11.17 0 0; 27 0 -1 0; 28 5.76 -1 0;
29 4.23 -1 -1.87; 30 5.76 -1 -1.87; 31 4.23 -1 -3.62; 32 5.76 -1 -3.62;
33 11.17 -1 -3.62; 34 0 -1 -5.03; 35 7.25 -1 -5.83; 36 11.17 -1 -5.83;
37 5.76 -1 -9.07; 38 0 -1 -10.82; 39 5.76 -1 -10.82; 40 11.17 -1 -10.82;
41 11.17 -1 0; 42 0 3.35 0; 43 5.76 3.35 0; 44 0 3.35 -1.87;
45 4.23 3.35 -1.87; 46 5.76 3.35 -1.87; 47 4.23 3.35 -3.62; 48 5.76 3.35 -3.62;
49 7.25 3.35 -3.62; 50 11.17 3.35 -3.62; 51 11.48 3.35 -3.62; 52 0 3.35 -5.03;
53 4.23 3.35 -5.03; 54 5.76 3.35 -5.03; 55 5.76 3.35 -5.83; 56 7.25 3.35 -5.83;
57 7.59 3.35 -5.83; 58 11.17 3.35 -5.83; 59 11.48 3.35 -5.83; 60 0 3.35 -9.07;
61 5.76 3.35 -9.07; 62 0 3.35 -10.82; 63 5.76 3.35 -10.82; 64 7.59 3.35 -10.82;
65 11.17 3.35 -10.82; 66 11.17 3.35 0; 67 0 6.7 0; 68 5.76 6.7 0;
70 4.23 6.7 -1.87; 71 5.76 6.7 -1.87; 72 4.23 6.7 -3.62; 73 5.76 6.7 -3.62;
74 7.25 6.7 -3.62; 75 11.17 6.7 -3.62; 76 11.48 6.7 -3.62; 77 0 6.7 -5.03;
80 5.76 6.7 -5.83; 81 7.25 6.7 -5.83; 83 11.17 6.7 -5.83; 84 11.48 6.7 -5.83;
85 0 6.7 -9.07; 86 5.76 6.7 -9.07; 87 0 6.7 -10.82; 88 5.76 6.7 -10.82;
90 11.17 6.7 -10.82; 91 11.17 6.7 0; 95 4.23 10.05 -1.87; 96 5.76 10.05 -1.87;
97 4.23 10.05 -3.62; 98 5.76 10.05 -3.62; 99 7.25 10.05 -3.62;
100 11.17 10.05 -3.62; 101 11.48 10.05 -3.62; 105 5.76 10.05 -5.83;
106 7.25 10.05 -5.83; 108 11.17 10.05 -5.83; 109 11.48 10.05 -5.83;
113 5.76 10.05 -10.82; 115 11.17 10.05 -10.82; 118 4.23 6.7 -9.07;
119 4.23 6.7 -10.82; 120 0 6.7 -3.62; 121 2.44 6.7 0; 122 2.44 6.7 -1.87;
123 2.44 6.7 -3.62; 126 4.23 10.05 -10.82; 127 7.25 10.05 -1.87;
MEMBER INCIDENCES
1 27 1; 2 28 2; 3 41 26; 4 29 5; 5 30 6; 6 31 7; 7 32 8; 8 33 10; 9 34 12;
10 35 16; 11 36 18; 12 37 21; 13 38 22; 14 39 23; 15 40 25; 101 1 42; 102 2 43;
103 26 66; 104 5 45; 105 6 46; 106 7 47; 107 8 48; 108 10 50; 109 12 52;
110 16 56; 111 18 58; 112 21 61; 113 22 62; 114 23 63; 115 25 65; 201 42 67;
202 43 68; 203 66 91; 204 45 70; 205 46 71; 206 47 72; 207 48 73; 208 50 75;
209 52 77; 210 56 81; 211 58 83; 212 61 86; 213 62 87; 214 63 88; 215 65 90;
304 70 95; 305 71 96; 306 72 97; 307 73 98; 308 75 100; 310 81 106; 311 83 108;
314 88 113; 315 90 115; 1001 1 2; 1002 2 26; 1003 4 5; 1004 5 6; 1005 7 8;
1006 8 9; 1007 9 10; 1008 10 11; 1009 12 7; 1011 15 16; 1012 16 18; 1013 18 19;
1014 22 23; 1015 23 25; 1016 1 4; 1017 4 12; 1018 12 22; 1019 5 7; 1020 2 6;
1021 6 8; 1022 8 15; 1023 15 21; 1024 21 23; 1025 9 16; 1026 26 10; 1027 18 25;
1028 11 19; 1058 42 43; 1059 43 66; 1060 44 45; 1061 45 46; 1062 47 48;
1063 48 49; 1064 49 50; 1065 50 51; 1066 52 53; 1067 53 54; 1068 55 56;
1069 56 57; 1070 57 58; 1071 58 59; 1072 60 61; 1073 62 63; 1074 63 64;
1075 64 65; 1076 42 44; 1077 44 52; 1078 52 60; 1079 60 62; 1080 45 47;
1081 47 53; 1082 43 46; 1083 46 48; 1084 48 54; 1085 54 55; 1086 55 61;
1087 61 63; 1088 49 56; 1089 57 64; 1090 66 50; 1091 58 65; 1092 51 59;
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ROYAL SHELTER TRICHY-18
ARCHITECTS PLC TRICHY SC

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1108 67 121; 1109 68 91; 1110 70 71; 1111 72 73; 1112 73 74; 1113 74 75;
1114 75 76; 1115 80 81; 1116 81 83; 1117 83 84; 1118 85 118; 1119 87 119;
1120 88 90; 1121 67 120; 1122 77 85; 1123 85 87; 1124 70 72; 1125 68 71;
1126 71 73; 1127 73 80; 1128 80 86; 1129 86 88; 1130 74 81; 1131 91 75;
1132 83 90; 1133 76 84; 1143 95 96; 1144 97 98; 1145 98 99; 1146 99 100;
1147 100 101; 1148 105 106; 1149 106 108; 1150 108 109; 1151 113 115;
1152 95 97; 1153 97 126; 1154 96 98; 1155 98 105; 1156 105 113; 1157 99 106;
1158 108 115; 1159 101 109; 1160 118 86; 1161 72 118; 1162 119 88;
1163 118 119; 1164 120 77; 1165 120 123; 1166 121 68; 1167 122 70;
1168 121 122; 1169 123 72; 1170 122 123; 1171 126 113; 1172 127 99; 1173 12 21;
1174 96 127;
DEFINE MATERIAL START
ISOTROPIC CONCRETE
E 2.17185e+007
POISSON 0.17
DENSITY 23.5616
ALPHA 1e-005
DAMP 0.05
TYPE CONCRETE
STRENGTH FCU 27579
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1062 1083 1087 1110 1111 1124 1126 1129 1144 1152 1154 PRIS YD 0.23 ZD 0.23
5 105 205 305 PRIS YD 0.23 ZD 0.3
7 8 11 107 108 111 207 208 211 307 308 311 PRIS YD 0.23 ZD 0.38
1 9 12 101 109 112 201 209 212 PRIS YD 0.23 ZD 0.46
4 104 204 304 1004 1005 1009 1019 TO 1021 1024 1025 1088 1125 1130 1143 1157 -
1163 1167 1168 1170 1172 1174 PRIS YD 0.3 ZD 0.23
2 6 14 102 106 114 202 206 214 306 314 1003 1011 1026 1028 1060 1061 1066 -
1067 TO 1077 1080 TO 1082 1089 TO 1092 1109 1115 TO 1117 1120 1127 1128 1131 -
1132 TO 1133 1148 TO 1151 1155 1156 1158 1159 1165 -
1169 PRIS YD 0.38 ZD 0.23
3 10 13 15 103 110 113 115 203 210 213 215 310 315 1001 1002 1006 TO 1008 -
1012 TO 1018 1022 1023 1027 1058 1059 1063 TO 1065 1078 1079 1084 TO 1086 -
1108 1112 TO 1114 1118 1119 1121 TO 1123 1145 TO 1147 1160 TO 1162 1164 1166 -
1173 PRIS YD 0.46 ZD 0.23
1153 1171 PRIS YD 0.53 ZD 0.23
CONSTANTS
MATERIAL CONCRETE ALL
SUPPORTS
27 TO 41 PINNED
MEMBER RELEASE
1060 1064 1067 1068 1070 1072 1075 1077 1079 1085 1086 1088 1089 1092 1113 -
1115 1118 1123 1128 1130 1133 1146 1148 1156 1157 1159 1160 1162 TO 1171 -
1172 START MX
1063 1065 TO 1067 1069 1071 1074 1076 1078 1081 1084 1085 1089 1092 1108 1112 -
1114 1117 TO 1119 1121 1122 1127 1133 1145 1147 1150 1153 1155 1159 1161 -
1163 1165 1168 1170 1172 1174 END MX
LOAD 1 LOADTYPE None  TITLE LOAD CASE 1  SELF WEIGHT
SELFWEIGHT Y -1
LOAD 2 LOADTYPE Dead  TITLE LOAD CASE 2 DEAD LAOD
FLOOR LOAD
YRANGE 3.35 3.35 FLOAD -5 XRANGE 0 11.48  ZRANGE -10.82 0  GY
YRANGE 10.05 10.05 FLOAD -5.5 XRANGE 0 11.48  ZRANGE -10.82 -1.87  GY
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ROYAL SHELTER * TRICHY-18 *

ARCHITECTS PLUS * TRICHY *

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YRANGE 6.7 6.7 FLOAD -5 XRANGE 4.23 11.48  ZRANGE -10.82 -3.62  GY
YRANGE 6.7 6.7 FLOAD -5 XRANGE 4.23 5.76  ZRANGE -3.62 -1.87  GY
YRANGE 6.7 6.7 FLOAD -5.5 XRANGE 5.76 11.17  ZRANGE -3.62 0  GY
YRANGE 6.7 6.7 FLOAD -5.5 XRANGE 0 4.23  ZRANGE -10.82 -3.62  GY
YRANGE 6.7 6.7 FLOAD -5.5 XRANGE 0 2.44  ZRANGE -3.62 0  GY
YRANGE 6.7 6.7 FLOAD -5.5 XRANGE 2.44 5.79  ZRANGE -1.87 0  GY
LOAD 3 LOADTYPE Dead  TITLE LOAD CASE 3 DEAD LOAD CUTOUT
FLOOR LOAD
YRANGE 3.35 6.7 FLOAD 5 XRANGE 7.25 11.48  ZRANGE -5.83 -3.62  GY
YRANGE 3.35 6.7 FLOAD 5 XRANGE 4.23 5.76  ZRANGE -3.62 -1.87  GY
YRANGE 10.05 10.05 FLOAD 5.5 XRANGE 7.25 11.48  ZRANGE -5.83 -3.62  GY
YRANGE 10.05 10.05 FLOAD 5.5 XRANGE 4.23 5.76  ZRANGE -3.62 -1.87  GY
LOAD 4 LOADTYPE Live  TITLE LOAD CASE 4 LIVE LOAD
FLOOR LOAD
YRANGE 3.35 3.35 FLOAD -2 XRANGE 0 11.48  ZRANGE -10.82 0  GY
YRANGE 10.05 10.05 FLOAD -1.5 XRANGE 0 11.48  ZRANGE -10.82 -1.87  GY
YRANGE 6.7 6.7 FLOAD -2 XRANGE 4.23 11.48  ZRANGE -10.82 -3.62  GY
YRANGE 6.7 6.7 FLOAD -2 XRANGE 4.23 5.76  ZRANGE -3.62 -1.87  GY
YRANGE 6.7 6.7 FLOAD -1.5 XRANGE 5.76 11.17  ZRANGE -3.62 0  GY
YRANGE 6.7 6.7 FLOAD -1.5 XRANGE 0 4.23  ZRANGE -10.82 -3.62  GY
YRANGE 6.7 6.7 FLOAD -1.5 XRANGE 0 2.44  ZRANGE -3.62 0  GY
YRANGE 6.7 6.7 FLOAD -1.5 XRANGE 2.44 5.79  ZRANGE -1.87 0  GY
LOAD 5 LOADTYPE Live  TITLE LOAD CASE 5 LIVE LOAD CUTOUT
FLOOR LOAD
YRANGE 3.35 6.7 FLOAD 2 XRANGE 7.25 11.48  ZRANGE -5.83 -3.62  GY
YRANGE 3.35 6.7 FLOAD 2 XRANGE 4.23 5.76  ZRANGE -3.62 -1.87  GY
YRANGE 10.05 10.05 FLOAD 1.5 XRANGE 7.25 11.48  ZRANGE -5.83 -3.62  GY
YRANGE 10.05 10.05 FLOAD 1.5 XRANGE 4.23 5.76  ZRANGE -3.62 -1.87  GY
LOAD 6 LOADTYPE Live  TITLE LOAD CASE 6 WALL LOAD
MEMBER LOAD
1058 1059 1061 1062 1065 1071 1073 TO 1080 1083 1090 TO 1092 1110 TO 1114 -
1117 1120 1124 1126 1132 1133 1161 TO 1163 UNI GY -14.5
1060 1068 TO 1070 1072 1082 1084 TO 1087 1115 1116 1127 TO 1129 -
1160 UNI GY -7.5
1108 1109 1119 1121 TO 1123 1131 1151 1153 1158 1164 1166 1171 UNI GY -5.5
1146 TO 1150 1155 1159 1172 1174 UNI GY -11.5
1143 1144 1152 1154 UNI GY -20
LOAD 7 LOADTYPE Dead  TITLE LOAD CASE 7 SLAB LOAD
MEMBER LOAD
1088 1092 1130 1133 1159 UNI GY -27.2
1157 UNI GY -27.2 0 1.15
LOAD COMB 8 COMBINATION LOAD CASE 8
1 1.0 2 1.5 3 1.5 4 1.5 5 1.5 6 1.5 7 1.5
PERFORM ANALYSIS
LOAD LIST 8
START CONCRETE DESIGN
CODE INDIAN
CLEAR 0.04 MEMB 1 TO 15 101 TO 115 201 TO 215 304 TO 308 310 311 314 315
ELY 0.7 MEMB 1 TO 15 101 TO 115 201 TO 215 304 TO 308 310 311 314 315
ELZ 0.7 MEMB 1 TO 15 101 TO 115 201 TO 215 304 TO 308 310 311 314 315
FC 30000 MEMB 1 TO 15 101 TO 115 201 TO 215 304 TO 308 310 311 314 315
FC 25000 MEMB 1001 TO 1009 1011 TO 1028 1058 TO 1092 1108 TO 1133 1143 TO 1174
FYMAIN 500000 ALL
FYSEC 500000 ALL
```

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

```
MAXMAIN 25 ALL
MAXSEC 8 ALL
MINMAIN 10 ALL
MINSEC 8 ALL
RATIO 4 MEMB 1 TO 15 101 TO 115 201 TO 215 304 TO 308 310 311 314 315
TRACK 2 ALL
ENSH 1 MEMB 1001 TO 1009 1011 TO 1028 1058 TO 1092 1108 TO 1133 1143 TO 1174
DESIGN COLUMN 1 TO 15 101 TO 115 201 TO 215 304 TO 308 310 311 314 315
DESIGN BEAM 1001 TO 1009 1011 TO 1028 1058 TO 1092 1108 TO 1133 1143 TO 1174
CONCRETE TAKE
CLEAR 0.03 MEMB 1001 TO 1009 1011 TO 1028 1058 TO 1092 1108 TO 1133 -
1143 TO 1174
END CONCRETE DESIGN
FINISH
```

```
STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 31-Mar-25
JOB NAME Royal Kalpataru L1-L2
JOB CLIENT M/s.Royal Shelter
ENGINEER NAME P.Ravichandran
END JOB INFORMATION
INPUT WIDTH 79
UNIT METER KN
JOINT COORDINATES
1 0 0 0; 2 2.29 0 0; 3 7.29 0 0; 6 0 0 -3.25; 8 3.97 0 -3.25; 9 7.29 0 -3.25;
10 3.97 0 -8.08; 11 7.29 0 -8.08; 12 0 0 -8.47; 13 2.29 0 -8.47;
14 2.56 0 -8.47; 15 3.97 0 -8.47; 16 0 0 -11.36; 17 2.56 0 -11.36;
18 7.29 0 -11.36; 19 2.29 0 -3.25; 20 7.29 0 -8.47; 21 0 -1 0; 22 7.29 -1 0;
23 0 -1 -3.25; 24 7.29 -1 -3.25; 25 0 -1 -8.47; 26 3.97 -1 -8.47;
27 0 -1 -11.36; 28 7.29 -1 -11.36; 29 2.29 -1 -3.25; 30 7.29 -1 -8.47;
31 0 3.35 0; 32 2.29 3.35 0; 33 7.29 3.35 0; 34 0 3.35 -1.8; 35 2.29 3.35 -1.8;
36 0 3.35 -3.25; 37 3.97 3.35 -3.25; 38 7.29 3.35 -3.25; 39 3.97 3.35 -8.08;
40 7.29 3.35 -8.08; 41 0 3.35 -8.47; 42 2.29 3.35 -8.47; 43 2.56 3.35 -8.47;
44 3.97 3.35 -8.47; 45 0 3.35 -11.36; 46 2.56 3.35 -11.36; 47 7.29 3.35 -11.36;
48 2.29 3.35 -3.25; 49 7.29 3.35 -8.47; 50 0 6.7 0; 51 2.29 6.7 0;
52 7.29 6.7 0; 53 0 6.7 -1.8; 54 2.29 6.7 -1.8; 55 0 6.7 -3.25;
56 3.97 6.7 -3.25; 57 7.29 6.7 -3.25; 60 0 6.7 -8.47; 64 0 6.7 -11.36;
66 7.29 6.7 -11.36; 67 2.29 6.7 -3.25; 69 0 10.05 0; 70 2.29 10.05 0;
71 7.29 10.05 0; 72 0 10.05 -1.8; 73 2.29 10.05 -1.8; 74 0 10.05 -3.25;
75 3.97 10.05 -3.25; 76 7.29 10.05 -3.25; 79 0 10.05 -8.47; 83 0 10.05 -11.36;
85 7.29 10.05 -11.36; 86 2.29 10.05 -3.25; 88 3.97 6.7 -8.47;
89 7.29 6.7 -8.47; 90 3.97 10.05 -8.47; 91 7.29 10.05 -8.47;
92 5.77 10.05 -8.47; 93 5.77 10.05 -11.36; 94 5.77 6.7 -8.47;
95 5.77 6.7 -11.36;
MEMBER INCIDENCES
1 21 1; 2 22 3; 3 23 6; 4 29 19; 5 24 9; 6 25 12; 7 26 15; 8 30 20; 9 27 16;
10 28 18; 101 1 31; 102 3 33; 103 6 36; 104 19 48; 105 9 38; 106 12 41;
107 15 44; 108 20 49; 109 16 45; 110 18 47; 201 31 50; 202 33 52; 203 36 55;
204 48 67; 205 38 57; 206 41 60; 207 44 88; 208 49 89; 209 45 64; 210 47 66;
301 50 69; 302 52 71; 303 55 74; 304 67 86; 305 57 76; 306 60 79; 307 88 90;
308 89 91; 309 64 83; 310 66 85; 1001 1 2; 1002 2 3; 1003 6 19; 1004 8 9;
1005 10 11; 1006 12 13; 1007 13 14; 1008 14 15; 1009 16 17; 1010 17 18;
1011 1 6; 1012 6 12; 1013 12 16; 1014 2 19; 1015 19 13; 1016 14 17; 1017 8 10;
1018 10 15; 1019 3 9; 1020 9 11; 1021 11 20; 1022 20 18; 1023 19 8; 1044 31 32;
1045 32 33; 1046 34 35; 1047 36 48; 1048 37 38; 1049 39 40; 1050 41 42;
1051 42 43; 1052 43 44; 1053 45 46; 1054 46 47; 1055 31 34; 1056 34 36;
1057 36 41; 1058 41 45; 1059 32 35; 1060 35 48; 1061 48 42; 1062 43 46;
1063 37 39; 1064 39 44; 1065 33 38; 1066 38 40; 1067 40 49; 1068 49 47;
1069 48 37; 1080 50 51; 1081 51 52; 1082 53 54; 1083 55 67; 1084 56 57;
1085 88 94; 1086 60 88; 1087 64 95; 1088 50 53; 1089 53 55; 1090 55 60;
1091 60 64; 1092 51 54; 1093 54 67; 1094 56 88; 1095 52 57; 1096 57 89;
1097 89 66; 1098 67 56; 1109 69 70; 1110 70 71; 1111 72 73; 1112 74 86;
1113 75 76; 1114 90 92; 1115 79 90; 1116 83 93; 1117 69 72; 1118 72 74;
1119 74 79; 1120 79 83; 1121 70 73; 1122 73 86; 1123 92 93; 1124 75 90;
1125 71 76; 1126 76 91; 1127 91 85; 1128 86 75; 1129 92 91; 1130 93 85;
1131 94 89; 1132 95 66; 1133 94 95;
DEFINE MATERIAL START
ISOTROPIC CONCRETE
```

ROYAL SHELTER TRICHY-18
ARCHITECTS PLC TRICHY

```
E 2.17185e+007
POISSON 0.17
DENSITY 23.5616
ALPHA 1e-005
DAMP 0.05
TYPE CONCRETE
STRENGTH FCU 27579
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
3 103 203 303 PRIS YD 0.23 ZD 0.38
5 6 8 105 106 108 205 206 208 305 306 308 PRIS YD 0.23 ZD 0.46
1003 1013 1016 1022 1046 1047 1058 1062 1068 1082 1083 1091 1097 1111 1112 -
1120 1123 1127 1133 PRIS YD 0.3 ZD 0.23
9 109 209 309 1005 1011 1014 1019 1049 1055 1056 1059 1060 1065 1085 1088 -
1089 1092 1093 1095 1114 1117 1118 1121 1122 1125 1129 -
1131 PRIS YD 0.38 ZD 0.23
1 2 4 7 10 101 102 104 107 110 201 202 204 207 210 301 302 304 307 310 1004 -
1006 TO 1008 1012 1015 1017 1018 1020 1021 1023 1048 1050 TO 1052 1057 1061 -
1063 1064 1066 1067 1069 1084 1086 1090 1094 1096 1098 1113 1115 1119 1124 -
1126 1128 PRIS YD 0.46 ZD 0.23
1001 1002 1009 1010 1044 1045 1053 1054 1080 1081 1087 1109 1110 1116 1130 -
1132 PRIS YD 0.53 ZD 0.23
CONSTANTS
MATERIAL CONCRETE ALL
SUPPORTS
21 TO 30 PINNED
MEMBER RELEASE
1045 1046 1048 1049 1051 1052 1054 1056 1059 1060 1062 TO 1064 1067 1081 1082 -
1084 1089 1092 TO 1094 1110 1111 1113 1118 1121 TO 1124 1129 TO 1132 -
1133 START MX
1044 1046 1049 TO 1051 1053 1055 1059 1061 TO 1063 1066 1069 1080 1082 1085 -
1087 1088 1092 1098 1109 1111 1114 1116 1117 1121 1123 1128 1133 END MX
LOAD 1 LOADTYPE Dead  TITLE LOAD CASE 1 SELF WEIGHT
SELFWEIGHT Y -1
LOAD 2 LOADTYPE Dead  TITLE LOAD CASE 2 DEAD LOAD
FLOOR LOAD
YRANGE 3.35 6.7 FLOAD -5 XRANGE 0 7.29  ZRANGE -11.36 0  GY
YRANGE 10.05 10.05 FLOAD -5.5 XRANGE 0 7.29  ZRANGE -11.36 0  GY
LOAD 3 LOADTYPE Dead  TITLE LOAD CASE 3 DEAD LOAD CUTOUT
FLOOR LOAD
YRANGE 3.35 6.7 FLOAD 5 XRANGE 0 2.29  ZRANGE -8.47 -1.8  GY
LOAD 4 LOADTYPE Dead  TITLE LOAD CASE 4 LIVE LOAD
FLOOR LOAD
YRANGE 3.35 6.7 FLOAD -2 XRANGE 0 7.29  ZRANGE -11.36 0  GY
YRANGE 10.05 10.05 FLOAD -1.5 XRANGE 0 7.29  ZRANGE -11.36 0  GY
LOAD 5 LOADTYPE Dead  TITLE LOAD CASE 5 LIVE LOAD CUTOUT
FLOOR LOAD
YRANGE 3.35 6.7 FLOAD 2 XRANGE 0 2.29  ZRANGE -8.47 -1.8  GY
LOAD 6 LOADTYPE Dead  TITLE LOAD CASE 6 WALL LOAD
MEMBER LOAD
1044 1045 1047 1053 TO 1058 1060 1066 1080 1081 1083 1087 TO 1091 -
1095 TO 1097 1132 1133 UNI GY -14.5
1046 1048 TO 1052 1059 1069 1082 1085 1086 1092 1093 1131 UNI GY -7.5
1065 1068 1109 1110 1116 1117 1120 1125 TO 1127 1130 UNI GY -5.5
```

ROYAL SHELTER * TRICHY-18 *

ARCHITECTS PLUS * TRICHY *

```
1115 1119 1124 1128 UNI GY -11.5
1111 1112 1118 1122 UNI GY -20
LOAD 7 LOADTYPE Dead  TITLE LOAD CASE 7 SLAB LOAD
LOAD COMB 8 COMBINATION LOAD CASE 8
1 1.0 2 1.5 3 1.5 4 1.5 5 1.5 6 1.5 7 1.5
PERFORM ANALYSIS
LOAD LIST 8
START CONCRETE DESIGN
CODE INDIAN
CLEAR 0.04 MEMB 1 TO 10 101 TO 110 201 TO 210 301 TO 310
CLEAR 0.03 MEMB 1001 TO 1023 1044 TO 1069 1080 TO 1098 1109 TO 1133
ELY 0.7 MEMB 1 TO 10 101 TO 110 201 TO 210 301 TO 310
ELZ 0.7 MEMB 1 TO 10 101 TO 110 201 TO 210 301 TO 310
FC 30000 MEMB 1 TO 10 101 TO 110 201 TO 210 301 TO 310
FC 25000 MEMB 1001 TO 1023 1044 TO 1069 1080 TO 1098 1109 TO 1133
FYMAIN 500000 ALL
FYSEC 500000 ALL
MAXMAIN 25 ALL
MAXSEC 8 ALL
MINMAIN 10 ALL
MINSEC 8 ALL
ENSH 1 MEMB 1001 TO 1023 1044 TO 1069 1080 TO 1098 1109 TO 1133
RATIO 4 MEMB 1 TO 10 101 TO 110 201 TO 210 301 TO 310
TRACK 2 ALL
DESIGN BEAM 1001 TO 1023 1044 TO 1069 1080 TO 1098 1109 TO 1133
DESIGN COLUMN 1 TO 10 101 TO 110 201 TO 210 301 TO 310
CONCRETE TAKE
END CONCRETE DESIGN
FINISH
```

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

```
STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 05-Feb-25
JOB NAME Royal Kalpataru M1-M2
JOB CLIENT M/s.Royal Shelter
ENGINEER NAME P.Ravichandran
END JOB INFORMATION
INPUT WIDTH 79
UNIT METER KN
JOINT COORDINATES
1 0 0 0; 2 5.11 0 0; 3 6.86 0 0; 4 12.39 0 0; 5 0 0 -3.59; 6 5.11 0 -3.59;
7 6.86 0 -3.59; 9 5.11 0 -5.11; 10 6.86 0 -5.11; 11 7.32 0 -5.11;
12 12.39 0 -5.11; 13 0 0 -6.82; 14 5.11 0 -6.82; 15 7.32 0 -6.82;
16 0 0 -10.81; 17 5.11 0 -10.81; 18 7.32 0 -10.81; 19 12.39 0 -10.81;
20 0 -1 0; 21 5.11 -1 0; 22 6.86 -1 0; 23 12.39 -1 0; 24 0 -1 -3.59;
25 6.86 -1 -3.59; 26 5.11 -1 -5.11; 27 6.86 -1 -5.11; 28 12.39 -1 -5.11;
29 0 -1 -6.82; 30 5.11 -1 -6.82; 31 0 -1 -10.81; 32 5.11 -1 -10.81;
33 7.32 -1 -10.81; 34 12.39 -1 -10.81; 35 0 3.35 0; 36 5.11 3.35 0;
37 6.86 3.35 0; 38 12.39 3.35 0; 39 0 3.35 -3.59; 40 6.86 3.35 -3.59;
41 5.11 3.35 -5.11; 42 6.86 3.35 -5.11; 43 12.39 3.35 -5.11; 44 0 3.35 -6.82;
45 5.11 3.35 -6.82; 46 0 3.35 -10.81; 47 5.11 3.35 -10.81; 48 7.32 3.35 -10.81;
49 12.39 3.35 -10.81; 50 0 6.7 0; 51 5.11 6.7 0; 52 6.86 6.7 0; 53 12.39 6.7 0;
54 0 6.7 -3.59; 55 6.86 6.7 -3.59; 56 5.11 6.7 -5.11; 58 12.39 6.7 -5.11;
59 0 6.7 -6.82; 60 5.11 6.7 -6.82; 61 0 6.7 -10.81; 62 5.11 6.7 -10.81;
63 7.32 6.7 -10.81; 64 12.39 6.7 -10.81; 69 5.11 3.35 -3.59;
71 7.32 3.35 -5.11; 72 7.32 3.35 -6.82; 73 5.11 6.7 -3.59; 74 0 6.7 -5.11;
77 0 10.05 0; 78 5.11 10.05 0; 81 0 10.05 -3.59; 82 6.86 10.05 -3.59;
83 5.11 10.05 -5.11; 84 6.86 10.05 -5.11; 86 0 10.05 -6.82;
87 5.11 10.05 -6.82; 88 0 10.05 -10.81; 89 5.11 10.05 -10.81;
90 7.32 10.05 -10.81; 92 5.11 10.05 -3.59; 93 0 10.05 -5.11;
94 7.32 10.05 -5.11; 95 7.32 10.05 -6.82; 96 12.39 6.7 -6.82;
97 7.32 6.7 -6.82; 98 6.86 6.7 -5.11; 99 6.86 6.7 -6.82; 100 1.5 6.7 -5.11;
102 1.5 6.7 -10.81; 103 1.5 10.05 -5.11; 104 1.5 10.05 -10.81;
105 10.87 3.35 0; 106 10.87 3.35 -5.11; 107 3.59 3.35 -6.82;
108 3.59 3.35 -10.81;
MEMBER INCIDENCES
1 20 1; 2 21 2; 3 22 3; 4 23 4; 5 24 5; 6 25 7; 7 26 9; 8 27 10; 9 28 12;
10 29 13; 11 30 14; 12 31 16; 13 32 17; 14 33 18; 15 34 19; 101 1 35; 102 2 36;
103 3 37; 104 4 38; 105 5 39; 106 7 40; 107 9 41; 108 10 42; 109 12 43;
110 13 44; 111 14 45; 112 16 46; 113 17 47; 114 18 48; 115 19 49; 201 35 50;
202 36 51; 203 37 52; 204 38 53; 205 39 54; 206 40 55; 207 41 56; 208 42 98;
209 43 58; 210 44 59; 211 45 60; 212 46 61; 213 47 62; 214 48 63; 215 49 64;
301 50 77; 302 51 78; 305 54 81; 306 55 82; 307 56 83; 308 98 84; 310 59 86;
311 60 87; 312 61 88; 313 62 89; 314 63 90; 1001 1 2; 1002 2 3; 1003 3 4;
1004 9 10; 1005 10 11; 1006 11 12; 1007 13 14; 1008 14 15; 1009 16 17;
1010 17 18; 1011 18 19; 1012 1 5; 1013 5 13; 1014 13 16; 1015 2 6; 1016 6 9;
1017 9 14; 1018 14 17; 1019 3 7; 1020 7 10; 1021 11 15; 1022 15 18; 1023 4 12;
1024 12 19; 1070 35 36; 1071 36 37; 1072 37 105; 1073 39 69; 1074 69 40;
1076 41 42; 1077 42 71; 1078 71 106; 1079 44 107; 1080 45 72; 1081 46 108;
1082 47 48; 1083 48 49; 1084 35 39; 1085 39 44; 1087 44 46; 1088 36 69;
1089 69 41; 1090 41 45; 1091 45 47; 1092 37 40; 1093 40 42; 1094 71 72;
1095 72 48; 1096 38 43; 1097 43 49; 1098 50 51; 1099 51 52; 1100 52 53;
1101 73 55; 1102 74 100; 1103 56 98; 1104 97 96; 1106 60 99; 1107 61 102;
1108 62 63; 1109 63 64; 1110 50 54; 1111 54 74; 1112 74 59; 1113 59 61;
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ARCHITECTS PL TRICHY

ROYAL SHELTER TRICHY-18

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1114 51 73; 1115 73 56; 1116 56 60; 1117 60 62; 1118 52 55; 1119 55 98;
1120 98 99; 1121 97 63; 1122 53 58; 1123 58 96; 1136 77 78; 1137 92 82;
1138 93 103; 1139 83 84; 1140 84 94; 1143 87 95; 1144 88 104; 1145 89 90;
1146 77 81; 1147 81 93; 1148 93 86; 1149 86 88; 1150 78 92; 1151 92 83;
1152 83 87; 1153 87 89; 1154 82 84; 1155 94 95; 1156 95 90; 1157 96 64;
1158 99 97; 1159 5 9; 1160 6 7; 1161 100 56; 1163 102 62; 1164 100 102;
1165 103 83; 1166 104 89; 1167 103 104; 1168 105 38; 1169 106 43; 1170 105 106;
1171 107 45; 1172 108 47; 1173 107 108;
SUPPORTS
20 TO 34 PINNED
MEMBER RELEASE
1074 1078 1089 1094 1095 1101 1102 1104 1112 1115 1121 1137 1138 1148 1151 -
1155 TO 1157 1161 1164 1167 TO 1173 START MX
1072 1073 1077 TO 1081 1088 1094 1102 1104 1106 1111 1114 1123 1140 1143 1147 -
1150 1155 1170 1173 END MX
1107 END MX
1138 1144 1164 1167 END MX
1163 1165 1166 START MX
1120 END MX
1158 END MX
1158 START MX
DEFINE MATERIAL START
ISOTROPIC CONCRETE
E 2.17185e+007
POISSON 0.17
DENSITY 23.5616
ALPHA 1e-005
DAMP 0.05
TYPE CONCRETE
STRENGTH FCU 27579
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1004 1008 1010 1020 1143 1154 PRIS YD 0.23 ZD 0.23
1 4 5 9 TO 12 101 104 105 109 TO 112 201 204 205 209 TO 212 301 305 -
310 TO 312 PRIS YD 0.23 ZD 0.38
8 15 108 115 208 215 308 PRIS YD 0.23 ZD 0.46
1002 1012 TO 1014 1018 1019 1071 1074 1076 1082 1084 1087 1090 TO 1093 1099 -
1101 1103 1108 1110 1113 1117 1118 1121 1137 1139 1145 1146 1149 1152 1153 -
1159 1160 PRIS YD 0.3 ZD 0.23
2 3 6 13 14 102 103 106 113 114 202 203 206 213 214 302 306 313 314 1001 1003 -
1007 1009 1011 1015 TO 1017 1021 1022 1070 1073 1079 TO 1081 1083 1085 1088 -
1089 1094 1095 1098 1104 1106 1107 1109 1114 TO 1116 1122 1136 1138 1140 -
1144 1147 1148 1150 1151 1155 1156 1158 1163 1165 TO 1167 1170 TO 1171 -
1172 PRIS YD 0.38 ZD 0.23
7 107 207 307 1005 1006 1023 1024 1072 1077 1078 1096 1097 1100 1102 1111 -
1112 1119 1120 1123 1157 1161 1168 1169 PRIS YD 0.46 ZD 0.23
MEMBER PROPERTY AMERICAN
1164 1173 PRIS YD 0.34 ZD 0.23
CONSTANTS
MATERIAL CONCRETE ALL
LOAD 1 LOADTYPE None  TITLE LOAD CASE 1 SELF WEIGHT
SELFWEIGHT Y -1
LOAD 2 LOADTYPE Dead  TITLE LOAD CASE 2 DEAD LOAD
FLOOR LOAD
```

ROYAL SHELTER * TRICHY-18 *

ARCHITECTS PLUS TRICHY

```
YRANGE 3.35 7.75 FLOAD -5 XRANGE 0 12.39  ZRANGE -10.81 0  GY
YRANGE 10.05 10.05 FLOAD -5.5 XRANGE 0 7.32  ZRANGE -10.81 0  GY
YRANGE 6.7 6.7 FLOAD -2 XRANGE 1.5 5.11  ZRANGE -10.81 -5.11  GY
LOAD 3 LOADTYPE Dead  TITLE LOAD CASE 3 DEAD LOAD CUTOUT
FLOOR LOAD
YRANGE 3.35 7.75 FLOAD 5 XRANGE 5.11 7.32  ZRANGE -10.81 -6.82  GY
YRANGE 3.35 7.75 FLOAD 5 XRANGE 5.11 6.86  ZRANGE -5.11 -3.59  GY
YRANGE 10.05 10.05 FLOAD 5.5 XRANGE 5.11 7.32  ZRANGE -10.81 -6.82  GY
YRANGE 10.05 10.05 FLOAD 5.5 XRANGE 5.11 6.86  ZRANGE -5.11 -3.59  GY
LOAD 4 LOADTYPE Live  TITLE LOAD CASE 4 LIVE LOAD
FLOOR LOAD
YRANGE 3.35 7.75 FLOAD -2 XRANGE 0 12.39  ZRANGE -10.81 0  GY
YRANGE 10.05 10.05 FLOAD -1.5 XRANGE 0 7.32  ZRANGE -10.81 0  GY
LOAD 5 LOADTYPE Live  TITLE LOAD CASE 5 LIVE LOAD CUTOUT
FLOOR LOAD
YRANGE 3.35 7.75 FLOAD 2 XRANGE 5.11 7.32  ZRANGE -10.81 -6.82  GY
YRANGE 3.35 7.75 FLOAD 2 XRANGE 5.11 6.86  ZRANGE -5.11 -3.59  GY
YRANGE 10.05 10.05 FLOAD 1.5 XRANGE 5.11 7.32  ZRANGE -10.81 -6.82  GY
YRANGE 10.05 10.05 FLOAD 1.5 XRANGE 5.11 6.86  ZRANGE -5.11 -3.59  GY
LOAD 6 LOADTYPE Dead  TITLE LOAD CASE 6 WALL LOAD
MEMBER LOAD
1070 1074 1076 TO 1078 1081 TO 1085 1087 1089 1093 1096 TO 1103 1107 TO 1117 -
1119 1121 TO 1123 1137 1151 1154 1157 1161 1163 1164 1167 1169 1170 -
1172 UNI GY -14.5
1079 1088 1091 1092 1095 1171 1173 UNI GY -7.5
1071 1072 1136 1137 1144 1146 TO 1151 1154 1166 1168 UNI GY -5.6
1139 1140 1143 1145 1152 1153 1155 1156 UNI GY -11.5
LOAD 7 LOADTYPE Dead  TITLE LOAD CASE 7 SLAB LOAD
MEMBER LOAD
1143 UNI GY -26 1 2
1080 1082 1106 1108 UNI GY -26
LOAD COMB 8 COMBINATION LOAD CASE 8
1 1.0 2 1.5 3 1.5 4 1.5 5 1.5 6 1.5 7 1.5
PERFORM ANALYSIS
LOAD LIST 8
START CONCRETE DESIGN
CODE INDIAN
CLEAR 0.04 MEMB 1 TO 15 101 TO 115 201 TO 215 301 302 305 TO 308 310 TO 314
CLEAR 0.03 MEMB 1001 TO 1024 1070 TO 1074 1076 TO 1085 1087 TO 1104 -
1106 TO 1123 1136 TO 1140 1143 TO 1161 1163 TO 1173
ELY 0.7 MEMB 1 TO 15 101 TO 115 201 TO 215 301 302 305 TO 308 310 TO 314
ELZ 0.7 MEMB 1 TO 15 101 TO 115 201 TO 215 301 302 305 TO 308 310 TO 314
FC 30000 MEMB 1 TO 15 101 TO 115 201 TO 215 301 302 305 TO 308 310 TO 314
FC 25000 MEMB 1001 TO 1024 1070 TO 1074 1076 TO 1085 1087 TO 1104 -
1106 TO 1123 1136 TO 1140 1143 TO 1161 1163 TO 1173
FYMAIN 500000 ALL
FYSEC 500000 ALL
MAXMAIN 25 ALL
MAXSEC 8 ALL
MINMAIN 10 ALL
MINSEC 8 ALL
ENSH 1 MEMB 1001 TO 1024 1070 TO 1074 1076 TO 1085 1087 TO 1104 1106 TO 1123 -
1136 TO 1140 1143 TO 1161 1163 TO 1173
RATIO 4 MEMB 1 TO 15 101 TO 115 201 TO 215 301 302 305 TO 308 310 TO 314
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ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

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TRACK 2 ALL
DESIGN COLUMN 1 TO 15 101 TO 115 201 TO 215 301 302 305 TO 308 310 TO 314
DESIGN BEAM 1001 TO 1024 1070 TO 1074 1076 TO 1085 1087 TO 1104 1106 TO 1123 -
1136 TO 1140 1143 TO 1161 1163 TO 1173
CONCRETE TAKE
END CONCRETE DESIGN
FINISH
```

ANNEXURE-C

RC DESIGN OF ISOLATD FOOTING

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

Royal Kalpataru at Ganapathy, Coimbatore.

Footing Design

Footing data:

Axial Load	=	1083 kN
SBC	=	250 kN/m^2
Grade of conc.	=	M25
Grade of Steel	=	Fe500
Column size	=	380mm x 230mm

Design of footing:

Area of Footing	=	108/250 = 4.32 m^2
Size of Footing	=	2.08m x 2.08m
Net pressure	=	1083*1.5*2.08*2.08 = ----kN/m^2
Bending Moment Mu	=	434*1.025^2/2 = 228 kN m
Effective depth req.	=	228*10^6 / 3.33*1000 = 262mm
Provide Overall Depth	=	800mm
Effective depth	=	744mm

Tension Reinforcement:

Mu	=	228kN m
Mu/bd^2	=	0.412
Pt	=	0.10%
Ast	=	720mm^2
Provide	=	T12 @ 150mm c/c
Pro.Pt	=	0.11%

Check one way shear

Vu_1	=	434*(1.025-0.744)	= 122N
tv	=	122*10^3/1000*744	= 0.164N/mm^2
tc	=	0.290 N/mm^2	

tc = 0.290 > tv = 0.164 Hence safe

Check two way shear

Vu_2	=	434*($2.575^2 - 1.269^2$)	=	2178 N
tvz	=	2178*10^3/2.575*1269*744	=	0.895 N/mm^2
ks	=	1 N/mm^2		

ks = 1 > tvz = 0.895 Hence safe

Result

Footing size	=	2575mm x 2350 mm
Footing depth	=	800mm
Reinforcement	=	T12@150mm c/c

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

PROPOSED LUB HOUSE AT COIMBATORE. FOR M/s. ROYAL SHELTER. -FOOTING DESIGN

Footing data:

Axial load = 1650 kN

SBC = 310 kn/m^2

Grade of conc. = M30

Grade of steel. = Fe 500

Column size = 450mm x 600mm

Design of Footing

Area of Footing = 1650/400 = 5.33M^2

Size of Footing = 2.625M x 2.475M

Net Pressure = 1650*1.5/2.625*2.475 = 380 kn/m^2

Bending Moment Mu = 380*1.1^2 /2 = 230 kn/m

Effective depth req. = $\sqrt{230*10^6 / 3.99*1000}$ = 240mm

Provide Overall Depth = 675mm

Effective depth = 620mm

Tension Reinforcement

Mu = 230 kn/m

Mu/bd^2 = 0.500

Pt = 0.13 %

Ast = 810 mm^2

Provide = T12 @ 125mm c/c

pro. Pt = 0.146 %

Check one way Shear

Vu_1 = 380*1.1-0.62 = 183 N

tv = 183*10^3/1000*620 = 0.29 N/mm^2

tc = 0.292 N/mm^2

tc =0.292 > tv = 0.29 Hence safe

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

Check Two way Shear

Vu_2 = $380*(2.625^2 - 1.22^2)$ = 2059 N

tvz = $2059*10^3/2.625*1220*620$ = 1.0 N/mm²

ks = 1 N/mm²

ks =1 > tvz = 1.00 Hence safe

Result

Footing size = 2625mm x 2475mm

Footing Depth = 675mm

Reinforcement = T12@125mm c/c

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

ANNEXURE-D

RC DESIGN OF COLUMN

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

C O L U M N N O. 6 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 230.0 mm X 380.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 25 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 396.85

		About Z	About Y
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	7.94	7.94
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	7.94	7.94

REQD. STEEL AREA : 237.28 Sq.mm.
REQD. CONCRETE AREA: 29660.01 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 12 dia. (0.52%, 452.39 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1265.68 Muz1 : 59.82 Muy1 : 34.76

INTERACTION RATIO: 0.26 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 7 Puz : 1343.44 Muz : 76.17 Muy : 41.85 IR: 0.22

C O L U M N N O. 7 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 230.0 mm X 460.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 26 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 876.98

About Z About Y

INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	17.54	17.54
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	17.54	17.54

REQD. STEEL AREA : 524.35 Sq.mm.
REQD. CONCRETE AREA: 105275.66 Sq.mm.
MAIN REINFORCEMENT : Provide 8 - 12 dia. (0.86%, 904.78 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1617.85 Muz1 : 96.53 Muy1 : 44.87

INTERACTION RATIO: 0.30 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 26 Puz : 1755.38 Muz : 115.91 Muy : 51.06 IR: 0.26

C O L U M N N O. 8 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 460.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 27 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 661.28

		About Z	About Y
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	13.23	13.23
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	13.23	13.23

REQD. STEEL AREA : 395.38 Sq.mm.
REQD. CONCRETE AREA: 105404.63 Sq.mm.
MAIN REINFORCEMENT : Provide 8 - 12 dia. (0.86%, 904.78 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

ROYAL SHELTER TRICHY-18

ARCHITECTS PVT LTD TRICHY

Puz : 1571.23 Muz1 : 45.72 Muy1 : 98.55

INTERACTION RATIO: 0.25 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 27 Puz : 1755.38 Muz : 54.46 Muy : 127.30 IR: 0.21

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C O L U M N N O. 9 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 380.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 28 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 725.86

		About Z	About Y
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	14.52	14.52
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	14.52	14.52

REQD. STEEL AREA : 434.00 Sq.mm.
REQD. CONCRETE AREA: 54249.82 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 12 dia. (0.52%, 452.39 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1336.79 Muz1 : 37.08 Muy1 : 64.87

INTERACTION RATIO: 0.32 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 28 Puz : 1343.44 Muz : 39.24 Muy : 70.29 IR: 0.29

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C O L U M N N O. 10 D E S I G N R E S U L T S

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

LENGTH: 1000.0 mm CROSS SECTION: 380.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 29 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	565.45	
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	11.31	11.31
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	11.31	11.31

REQD. STEEL AREA : 338.09 Sq.mm.
REQD. CONCRETE AREA: 42260.74 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 12 dia. (0.52%, 452.39 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1302.12 Muz1 : 37.89 Muy1 : 66.33

INTERACTION RATIO: 0.27 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 29 Puz : 1343.44 Muz : 42.24 Muy : 77.22 IR: 0.24

C O L U M N N O. 11 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 380.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 30 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	687.57	
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	13.75	13.75
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-

ROYAL SHELTER TRICHY-18
ARCHITECTS PLC TRICHY

ADDITION MOMENTS (Maz and May) : - -

TOTAL DESIGN MOMENTS : 13.75 13.75

REQD. STEEL AREA : 411.10 Sq.mm.
REQD. CONCRETE AREA: 51387.96 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 12 dia. (0.52%, 452.39 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1328.51 Muz1 : 37.53 Muy1 : 65.67

INTERACTION RATIO: 0.31 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 30 Puz : 1343.44 Muz : 40.19 Muy : 72.28 IR: 0.28

C O L U M N N O. 12 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 380.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 31 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 575.91

	About Z	About Y
INITIAL MOMENTS	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	11.52	11.52
SLENDERNESS RATIOS	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	-	-
MOMENT REDUCTION FACTORS	-	-
ADDITION MOMENTS (Maz and May)	-	-
TOTAL DESIGN MOMENTS	11.52	11.52

REQD. STEEL AREA : 344.34 Sq.mm.
REQD. CONCRETE AREA: 43042.30 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 12 dia. (0.52%, 452.39 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1304.38 Muz1 : 37.93 Muy1 : 66.38

INTERACTION RATIO: 0.27 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

WORST LOAD CASE: 8
END JOINT: 31 Puz : 1343.44 Muz : 42.12 Muy : 76.86 IR: 0.24

C O L U M N N O. 13 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 230.0 mm X 380.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 32 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	720.42	
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	14.41	14.41
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	14.41	14.41

REQD. STEEL AREA : 430.74 Sq.mm.
REQD. CONCRETE AREA: 53842.96 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 12 dia. (0.52%, 452.39 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1335.61 Muz1 : 65.00 Muy1 : 37.15

INTERACTION RATIO: 0.32 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 32 Puz : 1343.44 Muz : 70.59 Muy : 39.39 IR: 0.29

C O L U M N N O. 14 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 230.0 mm X 380.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 33 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu)	:	629.44	
		About Z	About Y
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	12.59	12.59
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	12.59	12.59

REQD. STEEL AREA : 376.35 Sq.mm.
REQD. CONCRETE AREA: 47043.15 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 12 dia. (0.52%, 452.39 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1315.95 Muz1 : 66.33 Muy1 : 37.91

INTERACTION RATIO: 0.29 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 33 Puz : 1343.44 Muz : 74.86 Muy : 41.34 IR: 0.25

C O L U M N N O. 15 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1000.0 mm CROSS SECTION: 460.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 34 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu)	:	421.35	
		About Z	About Y
INITIAL MOMENTS	:	0.00	0.00
MOMENTS DUE TO MINIMUM ECC.	:	8.43	8.43
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	8.43	8.43

REQD. STEEL AREA : 251.93 Sq.mm.
REQD. CONCRETE AREA: 105548.09 Sq.mm.

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

MAIN REINFORCEMENT : Provide 8 - 12 dia. (0.86%, 904.78 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1519.37 Muz1 : 39.42 Muy1 : 82.56

INTERACTION RATIO: 0.25 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 34 Puz : 1755.38 Muz : 53.26 Muy : 122.68 IR: 0.20

C O L U M N N O. 101 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3350.0 mm CROSS SECTION: 380.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 1 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 414.69

		About Z	About Y
INITIAL MOMENTS	:	11.44	5.55
MOMENTS DUE TO MINIMUM ECC.	:	8.29	8.29
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	11.44	8.29

REQD. STEEL AREA : 247.95 Sq.mm.
REQD. CONCRETE AREA: 30993.25 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 12 dia. (0.52%, 452.39 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1269.53 Muz1 : 35.40 Muy1 : 61.06

INTERACTION RATIO: 0.34 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 35 Puz : 1343.44 Muz : 42.16 Muy : 76.79 IR: 0.66

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

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        C O L U M N   N O.    102   D E S I G N   R E S U L T S

      M30                    Fe500 (Main)                Fe500 (Sec.)

LENGTH:  3500.0 mm   CROSS SECTION:  230.0 mm X  380.0 mm  COVER: 40.0 mm

** GUIDING LOAD CASE:     8 END JOINT:     40  SHORT COLUMN


DESIGN FORCES (KNS-MET)
-----------------------
DESIGN AXIAL FORCE (Pu)             :     629.25

                                        About Z             About Y
INITIAL MOMENTS                     :       7.72              37.85
MOMENTS DUE TO MINIMUM ECC.         :      12.58              12.58

SLENDERNESS RATIOS                  :      -                   -
MOMENTS DUE TO SLENDERNESS EFFECT   :      -                   -
MOMENT REDUCTION FACTORS            :      -                   -
ADDITION MOMENTS (Maz and May)      :      -                   -

TOTAL DESIGN MOMENTS                :      12.58              37.85

REQD. STEEL AREA    :      564.35 Sq.mm.
REQD. CONCRETE AREA:    86835.65 Sq.mm.
MAIN REINFORCEMENT : Provide   4 - 16 dia. (0.92%,    804.25 Sq.mm.)
                     (Equally distributed)
TIE REINFORCEMENT  : Provide  8 mm dia. rectangular ties @ 230 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)
----------------------------------------------------------
Puz :   1383.91   Muz1 :     73.06   Muy1 :     40.76

INTERACTION RATIO: 0.98 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)
----------------------------------------------------------
WORST LOAD CASE:     8
END JOINT:    40 Puz :   1470.64   Muz :     92.03   Muy :     48.18   IR: 0.78
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        C O L U M N   N O.    103   D E S I G N   R E S U L T S

      M30                    Fe500 (Main)                Fe500 (Sec.)

LENGTH:  3500.0 mm   CROSS SECTION:  460.0 mm X  230.0 mm  COVER: 40.0 mm

** GUIDING LOAD CASE:     8 END JOINT:      3  SHORT COLUMN


DESIGN FORCES (KNS-MET)
-----------------------
DESIGN AXIAL FORCE (Pu)             :     306.57

                                        About Z             About Y
INITIAL MOMENTS                     :       9.24              9.47
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MOMENTS DUE TO MINIMUM ECC.          :       6.13                6.85

SLENDERNESS RATIOS                   :       -                   -
MOMENTS DUE TO SLENDERNESS EFFECT    :       -                   -
MOMENT REDUCTION FACTORS             :       -                   -
ADDITION MOMENTS (Maz and May)       :       -                   -

TOTAL DESIGN MOMENTS                 :       9.24                9.47

REQD. STEEL AREA   :      183.30 Sq.mm.
REQD. CONCRETE AREA:   105616.72 Sq.mm.
MAIN REINFORCEMENT : Provide   8 - 12 dia. (0.86%,    904.78 Sq.mm.)
                     (Equally distributed)
TIE REINFORCEMENT  : Provide  8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)
----------------------------------------------------------
Puz :   1494.56   Muz1 :     32.41   Muy1 :     67.16

INTERACTION RATIO: 0.42 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)
----------------------------------------------------------
WORST LOAD CASE:     8
END JOINT:    41 Puz :   1755.38   Muz :     49.35   Muy :    114.72   IR: 0.55
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        C O L U M N   N O.    104  D E S I G N   R E S U L T S

      M30                    Fe500 (Main)               Fe500 (Sec.)

LENGTH:  3500.0 mm   CROSS SECTION:  460.0 mm X  230.0 mm  COVER: 40.0 mm

** GUIDING LOAD CASE:     8 END JOINT:     7  SHORT COLUMN


DESIGN FORCES (KNS-MET)
-----------------------
DESIGN AXIAL FORCE (Pu)              :     842.83

                                          About Z             About Y
INITIAL MOMENTS                      :      15.64               9.64
MOMENTS DUE TO MINIMUM ECC.          :      16.86              18.82

SLENDERNESS RATIOS                   :      -                   -
MOMENTS DUE TO SLENDERNESS EFFECT    :      -                   -
MOMENT REDUCTION FACTORS             :      -                   -
ADDITION MOMENTS (Maz and May)       :      -                   -

TOTAL DESIGN MOMENTS                 :      16.86              18.82

REQD. STEEL AREA   :      503.93 Sq.mm.
REQD. CONCRETE AREA:   105296.09 Sq.mm.
MAIN REINFORCEMENT : Provide   8 - 12 dia. (0.86%,    904.78 Sq.mm.)
                     (Equally distributed)
TIE REINFORCEMENT  : Provide  8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)
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ROYAL SHELTER TRICHY-18 ARCHITECTS PLUS TRICHY

Puz : 1610.47 Muz1 : 45.28 Muy1 : 97.45

INTERACTION RATIO: 0.30 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 42 Puz : 1755.38 Muz : 51.95 Muy : 118.48 IR: 0.69

C O L U M N N O. 105 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3500.0 mm CROSS SECTION: 230.0 mm X 460.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 129 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	945.22	
INITIAL MOMENTS	:	11.56	10.67
MOMENTS DUE TO MINIMUM ECC.	:	21.11	18.90
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	21.11	18.90

REQD. STEEL AREA : 565.15 Sq.mm.
REQD. CONCRETE AREA: 105234.86 Sq.mm.
MAIN REINFORCEMENT : Provide 8 - 12 dia. (0.86%, 904.78 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1632.60 Muz1 : 94.05 Muy1 : 43.73

INTERACTION RATIO: 0.34 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 130 Puz : 1755.38 Muz : 111.98 Muy : 49.63 IR: 0.43

C O L U M N N O. 106 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

LENGTH: 3500.0 mm CROSS SECTION: 230.0 mm X 300.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 11 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu)	: 465.07	
	About Z	About Y
INITIAL MOMENTS	: 0.34	2.30
MOMENTS DUE TO MINIMUM ECC.	: 9.30	9.30
SLENDERNESS RATIOS	: -	-
MOMENTS DUE TO SLENDERNESS EFFECT	: -	-
MOMENT REDUCTION FACTORS	: -	-
ADDITION MOMENTS (Maz and May)	: -	-
TOTAL DESIGN MOMENTS	: 9.30	9.30

REQD. STEEL AREA : 278.07 Sq.mm.
REQD. CONCRETE AREA: 34758.39 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 12 dia. (0.66%, 452.39 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1032.02 Muz1 : 40.45 Muy1 : 29.99

INTERACTION RATIO: 0.31 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 11 Puz : 1095.04 Muz : 49.18 Muy : 35.22 IR: 0.26

C O L U M N N O. 107 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3500.0 mm CROSS SECTION: 230.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 14 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu)	: 461.31	
	About Z	About Y
INITIAL MOMENTS	: 1.98	2.04
MOMENTS DUE TO MINIMUM ECC.	: 9.23	9.23
SLENDERNESS RATIOS	: -	-
MOMENTS DUE TO SLENDERNESS EFFECT	: -	-
MOMENT REDUCTION FACTORS	: -	-
ADDITION MOMENTS (Maz and May)	: -	-

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

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TOTAL DESIGN MOMENTS                :       9.23              9.23

REQD. STEEL AREA    :       275.82 Sq.mm.
REQD. CONCRETE AREA:     52624.18 Sq.mm.
MAIN REINFORCEMENT : Provide   4 - 12 dia. (0.86%,     452.39 Sq.mm.)
                     (Equally distributed)
TIE REINFORCEMENT  : Provide  8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)
----------------------------------------------------------
Puz :    813.86   Muz1 :     22.14   Muy1 :     22.14

INTERACTION RATIO: 0.49 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)
----------------------------------------------------------
WORST LOAD CASE:     8
END JOINT:    14 Puz :    877.69   Muz :     26.84   Muy :     26.84   IR: 0.39
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        C O L U M N   N O.    108  D E S I G N   R E S U L T S

      M30                    Fe500 (Main)              Fe500 (Sec.)

LENGTH:  3500.0 mm   CROSS SECTION:  460.0 mm X  230.0 mm  COVER: 40.0 mm

** GUIDING LOAD CASE:     8 END JOINT:    16  SHORT COLUMN


DESIGN FORCES (KNS-MET)
-----------------------
DESIGN AXIAL FORCE (Pu)             :     433.75

                                        About Z           About Y
INITIAL MOMENTS                     :       6.19              5.12
MOMENTS DUE TO MINIMUM ECC.         :       8.67              9.69

SLENDERNESS RATIOS                  :       -                 -
MOMENTS DUE TO SLENDERNESS EFFECT   :       -                 -
MOMENT REDUCTION FACTORS            :       -                 -
ADDITION MOMENTS (Maz and May)      :       -                 -

TOTAL DESIGN MOMENTS                :       8.67              9.69

REQD. STEEL AREA    :       259.34 Sq.mm.
REQD. CONCRETE AREA:    105540.67 Sq.mm.
MAIN REINFORCEMENT : Provide   8 - 12 dia. (0.86%,     904.78 Sq.mm.)
                     (Equally distributed)
TIE REINFORCEMENT  : Provide  8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)
----------------------------------------------------------
Puz :   1522.05   Muz1 :     40.01   Muy1 :     83.92

INTERACTION RATIO: 0.26 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)
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WORST LOAD CASE: 8
END JOINT: 46 Puz : 1755.38 Muz : 53.36 Muy : 122.89 IR: 0.34

C O L U M N N O. 109 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3500.0 mm CROSS SECTION: 380.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 47 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	694.00	
INITIAL MOMENTS	:	41.44	3.83
MOMENTS DUE TO MINIMUM ECC.	:	13.88	13.88
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	41.44	13.88

REQD. STEEL AREA : 871.39 Sq.mm.
REQD. CONCRETE AREA: 86528.61 Sq.mm.
MAIN REINFORCEMENT : Provide 8 - 12 dia. (1.04%, 904.78 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1494.91 Muz1 : 44.35 Muy1 : 81.69

INTERACTION RATIO: 0.98 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 47 Puz : 1506.98 Muz : 45.38 Muy : 84.48 IR: 0.95

C O L U M N N O. 110 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3500.0 mm CROSS SECTION: 460.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 18 SHORT COLUMN

```
-----------------------
DESIGN AXIAL FORCE (Pu)              :    1078.47

                                          About Z          About Y
INITIAL MOMENTS                      :       6.64             0.96
MOMENTS DUE TO MINIMUM ECC.          :      21.57            24.09

SLENDERNESS RATIOS                   :       -                -
MOMENTS DUE TO SLENDERNESS EFFECT    :       -                -
MOMENT REDUCTION FACTORS             :       -                -
ADDITION MOMENTS (Maz and May)       :       -                -

TOTAL DESIGN MOMENTS                 :      21.57            24.09

REQD. STEEL AREA    :      644.83 Sq.mm.
REQD. CONCRETE AREA:   105155.19 Sq.mm.
MAIN REINFORCEMENT : Provide   8 - 12 dia. (0.86%,    904.78 Sq.mm.)
                     (Equally distributed)
TIE REINFORCEMENT  : Provide  8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)
----------------------------------------------------------
Puz :   1661.40   Muz1 :     40.36   Muy1 :     86.74

INTERACTION RATIO: 0.44 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)
----------------------------------------------------------
WORST LOAD CASE:     8
END JOINT:    18 Puz :   1755.38   Muz :     45.14   Muy :    100.58   IR: 0.38
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        C O L U M N   N O.    111  D E S I G N   R E S U L T S

     M30                    Fe500 (Main)                Fe500 (Sec.)

LENGTH:  3500.0 mm   CROSS SECTION:  380.0 mm X  230.0 mm  COVER: 40.0 mm

** GUIDING LOAD CASE:    8 END JOINT:    20  SHORT COLUMN


DESIGN FORCES (KNS-MET)
-----------------------
DESIGN AXIAL FORCE (Pu)              :    410.43

                                          About Z          About Y
INITIAL MOMENTS                      :       7.76             3.43
MOMENTS DUE TO MINIMUM ECC.          :       8.21             8.21

SLENDERNESS RATIOS                   :       -                -
MOMENTS DUE TO SLENDERNESS EFFECT    :       -                -
MOMENT REDUCTION FACTORS             :       -                -
ADDITION MOMENTS (Maz and May)       :       -                -

TOTAL DESIGN MOMENTS                 :       8.21             8.21

REQD. STEEL AREA    :      245.40 Sq.mm.
REQD. CONCRETE AREA:    30675.19 Sq.mm.
MAIN REINFORCEMENT : Provide   4 - 12 dia. (0.52%,    452.39 Sq.mm.)
```

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1268.61 Muz1 : 35.25 Muy1 : 60.78

INTERACTION RATIO: 0.26 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 49 Puz : 1343.44 Muz : 42.05 Muy : 76.56 IR: 0.38

C O L U M N N O. 112 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3500.0 mm CROSS SECTION: 380.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 21 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 449.10

		About Z	About Y
INITIAL MOMENTS	:	12.65	7.11
MOMENTS DUE TO MINIMUM ECC.	:	8.98	8.98
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	12.65	8.98

REQD. STEEL AREA : 268.52 Sq.mm.
REQD. CONCRETE AREA: 33565.20 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 12 dia. (0.52%, 452.39 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1276.97 Muz1 : 36.43 Muy1 : 63.07

INTERACTION RATIO: 0.35 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 50 Puz : 1343.44 Muz : 42.79 Muy : 78.16 IR: 0.77

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

C O L U M N N O. 113 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3500.0 mm CROSS SECTION: 230.0 mm X 380.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 22 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu)	:	705.84	
		About Z	About Y
INITIAL MOMENTS	:	10.01	7.50
MOMENTS DUE TO MINIMUM ECC.	:	14.12	14.12
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	14.12	14.12

REQD. STEEL AREA : 422.02 Sq.mm.
REQD. CONCRETE AREA: 52753.08 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 12 dia. (0.52%, 452.39 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1332.46 Muz1 : 65.32 Muy1 : 37.33

INTERACTION RATIO: 0.31 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 51 Puz : 1343.44 Muz : 71.73 Muy : 39.93 IR: 0.46

C O L U M N N O. 114 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3500.0 mm CROSS SECTION: 230.0 mm X 300.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 23 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu)	:	384.93	
		About Z	About Y
INITIAL MOMENTS	:	0.26	5.88
MOMENTS DUE TO MINIMUM ECC.	:	7.70	7.70

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

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SLENDERNESS RATIOS                    :     -                    -
MOMENTS DUE TO SLENDERNESS EFFECT     :     -                    -
MOMENT REDUCTION FACTORS              :     -                    -
ADDITION MOMENTS (Maz and May)        :     -                    -

TOTAL DESIGN MOMENTS                  :       7.70                 7.70

REQD. STEEL AREA    :      230.15 Sq.mm.
REQD. CONCRETE AREA:    28769.11 Sq.mm.
MAIN REINFORCEMENT : Provide   4 - 12 dia. (0.66%,    452.39 Sq.mm.)
                     (Equally distributed)
TIE REINFORCEMENT  : Provide  8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)
----------------------------------------------------------
Puz :   1014.70   Muz1 :     39.59   Muy1 :     29.42

INTERACTION RATIO: 0.29 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)
----------------------------------------------------------
WORST LOAD CASE:     8
END JOINT:    52 Puz :   1095.04   Muz :     51.12   Muy :     36.22   IR: 0.40
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        C O L U M N   N O.    115   D E S I G N   R E S U L T S

     M30                    Fe500 (Main)                Fe500 (Sec.)

LENGTH:  3500.0 mm   CROSS SECTION:  380.0 mm X  230.0 mm  COVER: 40.0 mm

** GUIDING LOAD CASE:    8 END JOINT:    76  SHORT COLUMN


DESIGN FORCES (KNS-MET)
-----------------------
DESIGN AXIAL FORCE (Pu)               :     91.10

                                          About Z             About Y
INITIAL MOMENTS                       :      6.40               15.50
MOMENTS DUE TO MINIMUM ECC.           :      1.82                1.82

SLENDERNESS RATIOS                    :     -                    -
MOMENTS DUE TO SLENDERNESS EFFECT     :     -                    -
MOMENT REDUCTION FACTORS              :     -                    -
ADDITION MOMENTS (Maz and May)        :     -                    -

TOTAL DESIGN MOMENTS                  :      6.40               15.50

REQD. STEEL AREA    :      164.60 Sq.mm.
REQD. CONCRETE AREA:    20574.46 Sq.mm.
MAIN REINFORCEMENT : Provide   4 - 12 dia. (0.52%,    452.39 Sq.mm.)
                     (Equally distributed)
TIE REINFORCEMENT  : Provide  8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)
----------------------------------------------------------
Puz :   1239.40   Muz1 :     15.85   Muy1 :     26.69
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ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

INTERACTION RATIO: 0.98 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 76 Puz : 1343.44 Muz : 24.93 Muy : 44.55 IR: 0.60

C O L U M N N O. 201 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3500.0 mm CROSS SECTION: 380.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 53 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	165.90	
INITIAL MOMENTS	:	32.56	45.73
MOMENTS DUE TO MINIMUM ECC.	:	3.32	3.32
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	32.56	45.73

REQD. STEEL AREA : 1598.02 Sq.mm.
REQD. CONCRETE AREA: 85801.98 Sq.mm.
MAIN REINFORCEMENT : Provide 8 - 16 dia. (1.84%, 1608.50 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 230 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1757.58 Muz1 : 55.88 Muy1 : 109.65

INTERACTION RATIO: 1.00 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 53 Puz : 1761.37 Muz : 55.92 Muy : 112.46 IR: 0.99

C O L U M N N O. 202 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

** GUIDING LOAD CASE: 8 END JOINT: 40 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	266.71	
INITIAL MOMENTS	:	3.84	28.93
MOMENTS DUE TO MINIMUM ECC.	:	5.33	5.33
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	5.33	28.93

REQD. STEEL AREA : 334.88 Sq.mm.
REQD. CONCRETE AREA: 41860.20 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 12 dia. (0.52%, 452.39 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1300.96 Muz1 : 56.14 Muy1 : 32.12

INTERACTION RATIO: 0.99 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 40 Puz : 1343.44 Muz : 66.25 Muy : 36.44 IR: 0.87

C O L U M N N O. 203 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3500.0 mm CROSS SECTION: 460.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 55 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	144.84	
INITIAL MOMENTS	:	25.38	67.83
MOMENTS DUE TO MINIMUM ECC.	:	2.90	3.23
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

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TOTAL DESIGN MOMENTS                :      25.38              67.83

REQD. STEEL AREA    :      1406.34 Sq.mm.
REQD. CONCRETE AREA:    104393.68 Sq.mm.
MAIN REINFORCEMENT : Provide   8 - 16 dia. (1.52%,   1608.50 Sq.mm.)
                     (Equally distributed)
TIE REINFORCEMENT  : Provide  8 mm dia. rectangular ties @ 230 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)
----------------------------------------------------------
Puz :   1936.69   Muz1 :     54.17   Muy1 :    128.83

INTERACTION RATIO: 1.00 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)
----------------------------------------------------------
WORST LOAD CASE:     8
END JOINT:    55 Puz :   2009.77   Muz :     58.60   Muy :    147.74   IR: 0.89
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        C O L U M N   N O.    204  D E S I G N   R E S U L T S

      M30                     Fe500 (Main)               Fe500 (Sec.)

LENGTH:  3500.0 mm   CROSS SECTION:  460.0 mm X  230.0 mm  COVER: 40.0 mm

** GUIDING LOAD CASE:    8 END JOINT:    56  SHORT COLUMN


DESIGN FORCES (KNS-MET)
-----------------------
DESIGN AXIAL FORCE (Pu)             :     499.85

                                        About Z            About Y
INITIAL MOMENTS                     :      79.68              7.54
MOMENTS DUE TO MINIMUM ECC.         :      10.00             11.16

SLENDERNESS RATIOS                  :      -                  -
MOMENTS DUE TO SLENDERNESS EFFECT   :      -                  -
MOMENT REDUCTION FACTORS            :      -                  -
ADDITION MOMENTS (Maz and May)      :      -                  -

TOTAL DESIGN MOMENTS                :      79.68             11.16

REQD. STEEL AREA    :      2719.68 Sq.mm.
REQD. CONCRETE AREA:    103080.34 Sq.mm.
MAIN REINFORCEMENT : Provide   8 - 25 dia. (3.71%,   3926.99 Sq.mm.)
                     (Equally distributed)
TIE REINFORCEMENT  : Provide  8 mm dia. rectangular ties @ 230 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)
----------------------------------------------------------
Puz :   2411.46   Muz1 :     84.11   Muy1 :    219.19

INTERACTION RATIO: 1.00 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)
----------------------------------------------------------
WORST LOAD CASE:     8
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ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

END JOINT: 56 Puz : 2847.91 Muz : 98.92 Muy : 290.03 IR: 0.84

C O L U M N N O. 205 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3500.0 mm CROSS SECTION: 230.0 mm X 460.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 130 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	530.14	
INITIAL MOMENTS	:	53.64	8.05
MOMENTS DUE TO MINIMUM ECC.	:	11.84	10.60
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	53.64	10.60

REQD. STEEL AREA : 316.98 Sq.mm.
REQD. CONCRETE AREA: 105483.04 Sq.mm.
MAIN REINFORCEMENT : Provide 8 - 12 dia. (0.86%, 904.78 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1542.89 Muz1 : 92.56 Muy1 : 43.69

INTERACTION RATIO: 0.68 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 131 Puz : 1755.38 Muz : 126.95 Muy : 55.07 IR: 0.68

C O L U M N N O. 206 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3500.0 mm CROSS SECTION: 230.0 mm X 300.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 44 SHORT COLUMN

DESIGN FORCES (KNS-MET)

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

DESIGN AXIAL FORCE (Pu) : 307.18

		About Z	About Y
INITIAL MOMENTS	:	3.68	5.70
MOMENTS DUE TO MINIMUM ECC.	:	6.14	6.14
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	6.14	6.14

REQD. STEEL AREA : 183.66 Sq.mm.
REQD. CONCRETE AREA: 22957.78 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 12 dia. (0.66%, 452.39 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c .

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 997.89 Muz1 : 36.37 Muy1 : 27.21

INTERACTION RATIO: 0.30 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 111 Puz : 1095.04 Muz : 49.44 Muy : 35.33 IR: 0.32

C O L U M N N O. 207 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3500.0 mm CROSS SECTION: 230.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 45 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 316.70

		About Z	About Y
INITIAL MOMENTS	:	5.36	3.54
MOMENTS DUE TO MINIMUM ECC.	:	6.33	6.33
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	6.33	6.33

REQD. STEEL AREA : 189.36 Sq.mm.
REQD. CONCRETE AREA: 52710.65 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 12 dia. (0.86%, 452.39 Sq.mm.)
(Equally distributed)

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 782.60 Muz1 : 22.81 Muy1 : 22.81

INTERACTION RATIO: 0.36 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 45 Puz : 877.69 Muz : 29.98 Muy : 29.98 IR: 0.28

COLUMN NO. 208 DESIGN RESULTS

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3500.0 mm CROSS SECTION: 460.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 60 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 274.44

		About Z	About Y
INITIAL MOMENTS	:	14.48	44.24
MOMENTS DUE TO MINIMUM ECC.	:	5.49	6.13
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	14.48	44.24

REQD. STEEL AREA : 361.00 Sq.mm.
REQD. CONCRETE AREA: 105439.02 Sq.mm.
MAIN REINFORCEMENT : Provide 8 - 12 dia. (0.86%, 904.78 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1558.80 Muz1 : 35.28 Muy1 : 75.24

INTERACTION RATIO: 1.00 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 60 Puz : 1755.38 Muz : 48.47 Muy : 113.06 IR: 0.69

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

C O L U M N N O. 209 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3500.0 mm CROSS SECTION: 380.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 47 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	433.00	
INITIAL MOMENTS	:	37.16	2.82
MOMENTS DUE TO MINIMUM ECC.	:	8.66	8.66
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	37.16	8.66

REQD. STEEL AREA : 466.01 Sq.mm.
REQD. CONCRETE AREA: 86933.99 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 16 dia. (0.92%, 804.25 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 230 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1348.36 Muz1 : 39.91 Muy1 : 71.00

INTERACTION RATIO: 1.00 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 47 Puz : 1470.64 Muz : 50.66 Muy : 97.97 IR: 0.76

C O L U M N N O. 210 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3500.0 mm CROSS SECTION: 460.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 48 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	689.87	
INITIAL MOMENTS	:	4.73	23.79
MOMENTS DUE TO MINIMUM ECC.	:	13.80	15.41

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	13.80	23.79

REQD. STEEL AREA : 412.48 Sq.mm.
REQD. CONCRETE AREA: 105387.54 Sq.mm.
MAIN REINFORCEMENT : Provide 8 - 12 dia. (0.86%, 904.78 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1577.41 Muz1 : 45.85 Muy1 : 98.76

INTERACTION RATIO: 0.32 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 62 Puz : 1755.38 Muz : 54.25 Muy : 126.42 IR: 0.53

C O L U M N N O. 211 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3500.0 mm CROSS SECTION: 380.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 63 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu)	:	268.94	
		About Z	About Y
INITIAL MOMENTS	:	33.65	4.02
MOMENTS DUE TO MINIMUM ECC.	:	5.38	5.38
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	33.65	5.38

REQD. STEEL AREA : 530.64 Sq.mm.
REQD. CONCRETE AREA: 86869.36 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 16 dia. (0.92%, 804.25 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 230 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1371.73 Muz1 : 36.79 Muy1 : 65.98

ROYAL SHELTER TRICHY-18 ARCHITECTS PLUS TRICHY

INTERACTION RATIO: 1.00 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 63 Puz : 1470.64 Muz : 45.95 Muy : 87.16 IR: 0.79

C O L U M N N O. 212 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3500.0 mm CROSS SECTION: 380.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 50 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	280.68	
INITIAL MOMENTS	:	41.08	24.15
MOMENTS DUE TO MINIMUM ECC.	:	5.61	5.61
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	41.08	24.15

REQD. STEEL AREA : 1342.57 Sq.mm.
REQD. CONCRETE AREA: 86057.43 Sq.mm.
MAIN REINFORCEMENT : Provide 12 - 12 dia. (1.55%, 1357.17 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1665.24 Muz1 : 53.78 Muy1 : 103.78

INTERACTION RATIO: 1.00 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 50 Puz : 1670.52 Muz : 53.80 Muy : 105.31 IR: 0.99

C O L U M N N O. 213 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3500.0 mm CROSS SECTION: 230.0 mm X 380.0 mm COVER: 40.0 mm

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

** GUIDING LOAD CASE: 8 END JOINT: 51 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	446.66	
INITIAL MOMENTS	:	33.48	16.42
MOMENTS DUE TO MINIMUM ECC.	:	8.93	8.93
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	33.48	16.42

REQD. STEEL AREA : 267.06 Sq.mm.
REQD. CONCRETE AREA: 33383.02 Sq.mm.
MAIN REINFORCEMENT : Provide 4 - 12 dia. (0.52%, 452.39 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 1276.44 Muz1 : 62.95 Muy1 : 36.36

INTERACTION RATIO: 0.82 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 51 Puz : 1343.44 Muz : 78.26 Muy : 42.87 IR: 0.66

C O L U M N N O. 214 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3500.0 mm CROSS SECTION: 230.0 mm X 300.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 66 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	218.97	
INITIAL MOMENTS	:	6.22	21.35
MOMENTS DUE TO MINIMUM ECC.	:	4.38	4.38
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	6.22	21.35

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

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REQD. STEEL AREA    :      261.84 Sq.mm.
REQD. CONCRETE AREA:    32730.55 Sq.mm.
MAIN REINFORCEMENT : Provide   4 - 12 dia. (0.66%,    452.39 Sq.mm.)
                     (Equally distributed)
TIE REINFORCEMENT  : Provide  8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)
----------------------------------------------------------
Puz :   1026.16   Muz1 :     34.65   Muy1 :     25.71

INTERACTION RATIO: 1.00 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)
----------------------------------------------------------
WORST LOAD CASE:     8
END JOINT:    66 Puz :   1095.04   Muz :     44.38   Muy :     31.94   IR: 0.81
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        C O L U M N   N O.    215  D E S I G N   R E S U L T S

     M30                    Fe500 (Main)               Fe500 (Sec.)

LENGTH:  3500.0 mm   CROSS SECTION:  380.0 mm X  230.0 mm  COVER: 40.0 mm

** GUIDING LOAD CASE:    8 END JOINT:    76  SHORT COLUMN


DESIGN FORCES (KNS-MET)
-----------------------
DESIGN AXIAL FORCE (Pu)             :      11.94

                                        About Z            About Y
INITIAL MOMENTS                     :      6.71              14.72
MOMENTS DUE TO MINIMUM ECC.         :      0.24               0.24

SLENDERNESS RATIOS                  :      -                  -
MOMENTS DUE TO SLENDERNESS EFFECT   :      -                  -
MOMENT REDUCTION FACTORS            :      -                  -
ADDITION MOMENTS (Maz and May)      :      -                  -

TOTAL DESIGN MOMENTS                :      6.71              14.72

REQD. STEEL AREA    :      349.15 Sq.mm.
REQD. CONCRETE AREA:    43643.14 Sq.mm.
MAIN REINFORCEMENT : Provide   4 - 12 dia. (0.52%,    452.39 Sq.mm.)
                     (Equally distributed)
TIE REINFORCEMENT  : Provide  8 mm dia. rectangular ties @ 190 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)
----------------------------------------------------------
Puz :   1306.12   Muz1 :     15.78   Muy1 :     26.83

INTERACTION RATIO: 0.97 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)
----------------------------------------------------------
WORST LOAD CASE:     8
END JOINT:    76 Puz :   1343.44   Muz :     18.98   Muy :     33.10   IR: 0.80
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ROYAL SHELTER * TRICHY-18 *
ARCHITECTS PLUS * TRICHY *

ANNEXURE-E

RC DESIGN OF BEAM

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

5069.2	0.00	0.00	0.00	8	-5.99	-0.47	8
	0.00	-1.66	-0.47	8			
5530.0	0.00	0.00	0.00	8	-7.31	-0.47	8
	0.00	-4.73	-0.47	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	193.15/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 160 mm
460.8	193.15/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
921.7	193.15/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
1382.5	193.15/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
1843.3	0.00/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
2304.2	0.00/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
2765.0	0.00/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
3225.8	0.00/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
3686.7	0.00/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
4147.5	0.00/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
4608.3	193.15/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
5069.2	193.15/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 160 mm
5530.0	193.15/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 160 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 609.0 mm AWAY FROM START SUPPORT
VY = 6.83 MX = -0.47 LD= 8
Provide 2 Legged 8i @ 160 mm c/c

SHEAR DESIGN RESULTS AT 684.0 mm AWAY FROM END SUPPORT
VY = -5.36 MX = -0.47 LD= 8
Provide 2 Legged 8i @ 160 mm c/c

B E A M N O. 19 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 5530.0 mm SIZE: 230.0 mm X 380.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	6.57	0.16	8
	0.00	-9.04	0.16	8			
460.8	0.00	0.00	0.00	8	5.62	0.16	8

921.7	0.00	0.00	0.00	8		4.67	0.16	8
	0.00	-3.86	0.16	8				
1382.5	0.00	0.00	0.00	8		3.72	0.16	8
	0.00	-1.93	0.16	8				
1843.3	0.00	-0.43	0.16	8		2.77	0.16	8
	0.00	0.00	0.00	8				
2304.2	0.00	0.62	0.16	8		1.82	0.16	8
	0.00	0.00	0.00	8				
2765.0	0.00	1.25	0.16	8		0.87	0.16	8
	0.00	0.00	0.00	8				
3225.8	0.00	1.43	0.16	8		-0.08	0.16	8
	0.00	0.00	0.00	8				
3686.7	0.00	1.18	0.16	8		-1.02	0.16	8
	0.00	0.00	0.00	8				
4147.5	0.00	0.48	0.16	8		-1.97	0.16	8
	0.00	0.00	0.00	8				
4608.3	0.00	0.00	0.00	8		-2.92	0.16	8
	0.00	-0.64	0.16	8				
5069.2	0.00	0.00	0.00	8		-3.87	0.16	8
	0.00	-2.21	0.16	8				
5530.0	0.00	0.00	0.00	8		-4.82	0.16	8
	0.00	-4.21	0.16	8				

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	134.90/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 125 mm
460.8	134.90/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 125 mm
921.7	134.90/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 125 mm
1382.5	134.90/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 125 mm
1843.3	134.90/ 235.62(3-10i)|	134.90/ 235.62(3-10i)|	8i @ 125 mm
2304.2	0.00/ 157.08(2-10i)|	134.90/ 235.62(3-10i)|	8i @ 125 mm
2765.0	0.00/ 157.08(2-10i)|	134.90/ 235.62(3-10i)|	8i @ 125 mm
3225.8	0.00/ 157.08(2-10i)|	134.90/ 235.62(3-10i)|	8i @ 125 mm
3686.7	0.00/ 157.08(2-10i)|	134.90/ 235.62(3-10i)|	8i @ 125 mm
4147.5	0.00/ 157.08(2-10i)|	134.90/ 235.62(3-10i)|	8i @ 125 mm
4608.3	134.90/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 125 mm
5069.2	134.90/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 125 mm
5530.0	134.90/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 125 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 460.0 mm AWAY FROM START SUPPORT
VY = 5.63 MX = 0.16 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

SHEAR DESIGN RESULTS AT 575.0 mm AWAY FROM END SUPPORT
VY = -3.65 MX = 0.16 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

ROYAL SHELTER TRICHY-18
ARCHITECTS PLC TRICHY

B E A M N O. 21 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1850.0 mm SIZE: 230.0 mm X 300.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	2.35	-0.62	8
	0.00	-0.37	-0.62	8			
154.2	0.00	0.00	0.00	8	2.10	-0.62	8
	0.00	-0.03	-0.62	8			
308.3	0.00	0.28	-0.62	8	1.85	-0.62	8
	0.00	0.00	0.00	8			
462.5	0.00	0.54	-0.62	8	1.60	-0.62	8
	0.00	0.00	0.00	8			
616.7	0.00	0.77	-0.62	8	1.35	-0.62	8
	0.00	0.00	0.00	8			
770.8	0.00	0.96	-0.62	8	1.10	-0.62	8
	0.00	0.00	0.00	8			
925.0	0.00	1.11	-0.62	8	0.85	-0.62	8
	0.00	0.00	0.00	8			
1079.2	0.00	1.22	-0.62	8	0.60	-0.62	8
	0.00	0.00	0.00	8			
1233.3	0.00	1.29	-0.62	8	0.34	-0.62	8
	0.00	0.00	0.00	8			
1387.5	0.00	1.33	-0.62	8	0.09	-0.62	8
	0.00	0.00	0.00	8			
1541.7	0.00	1.32	-0.62	8	-0.16	-0.62	8
	0.00	0.00	0.00	8			
1695.8	0.00	1.28	-0.62	8	-0.41	-0.62	8
	0.00	0.00	0.00	8			
1850.0	0.00	1.20	-0.62	8	-0.66	-0.62	8
	0.00	0.00	0.00	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
154.2	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
308.3	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
462.5	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
616.7	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
770.8	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
925.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
1079.2	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
1233.3	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
1387.5	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
1541.7	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
1695.8	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm

ROYAL STEELTER TRICHY-18
ARCHITECTS PLUS TRICHY

1850.0 | 0.00/ 157.08(2-10i)| 103.62/ 235.62(3-10i)| 8i @ 105 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 495.0 mm AWAY FROM START SUPPORT
VY = 1.55 MX = -0.62 LD= 8
Provide 2 Legged 8i @ 105 mm c/c

B E A M N O. - 22 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1600.0 mm SIZE: 230.0 mm X 300.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	1.18	-0.37	8	-0.96	-0.37	8
	0.00	0.00	0.00	8			
133.3	0.00	1.04	-0.37	8	-1.18	-0.37	8
	0.00	0.00	0.00	8			
266.7	0.00	0.87	-0.37	8	-1.39	-0.37	8
	0.00	0.00	0.00	8			
400.0	0.00	0.67	-0.37	8	-1.61	-0.37	8
	0.00	0.00	0.00	8			
533.3	0.00	0.44	-0.37	8	-1.83	-0.37	8
	0.00	0.00	0.00	8			
666.7	0.00	0.18	-0.37	8	-2.04	-0.37	8
	0.00	0.00	0.00	8			
800.0	0.00	-0.11	-0.37	8	-2.26	-0.37	8
	0.00	0.00	0.00	8			
933.3	0.00	0.00	0.00	8	-2.48	-0.37	8
	0.00	-0.42	-0.37	8			
1066.7	0.00	0.00	0.00	8	-2.69	-0.37	8
	0.00	-0.77	-0.37	8			
1200.0	0.00	0.00	0.00	8	-2.91	-0.37	8
	0.00	-1.14	-0.37	8			
1333.3	0.00	0.00	0.00	8	-3.13	-0.37	8
	0.00	-1.54	-0.37	8			
1466.7	0.00	0.00	0.00	8	-3.34	-0.37	8
	0.00	-1.97	-0.37	8			
1600.0	0.00	0.00	0.00	8	-3.56	-0.37	8
	0.00	-2.43	-0.37	8			

SUMMARY OF REINF. AREA (Sq.mm)

(in mm)	Reqd./Provided reinf.	Reqd./Provided reinf.	(2 legged)
0.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
133.3	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
266.7	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
400.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
533.3	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
666.7	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
800.0	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
933.3	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
1066.7	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
1200.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
1333.3	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
1466.7	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
1600.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 415.0 mm AWAY FROM END SUPPORT
VY = -2.89 MX = -0.37 LD= 8
Provide 2 Legged 8i @ 105 mm c/c

B E A M N O. 23 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 2060.0 mm SIZE: 230.0 mm X 230.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	1.50	0.02	8
	0.00	-0.95	0.02	8			
171.7	0.00	0.00	0.00	8	1.29	0.02	8
	0.00	-0.71	0.02	8			
343.3	0.00	0.00	0.00	8	1.07	0.02	8
	0.00	-0.51	0.02	8			
515.0	0.00	-0.34	0.02	8	0.86	0.02	8
	0.00	0.00	0.00	8			
686.7	0.00	0.00	0.00	8	0.64	0.02	8
	0.00	-0.21	0.02	8			
858.3	0.00	0.00	0.00	8	0.43	0.02	8
	0.00	-0.12	0.02	8			
1030.0	0.00	0.00	0.00	8	0.22	0.02	8
	0.00	-0.07	0.02	8			
1201.7	0.00	0.00	0.00	8	0.00	0.02	8
	0.00	-0.05	0.02	8			
1373.3	0.00	0.00	0.00	8	-0.21	0.02	8
	0.00	-0.07	0.02	8			
1545.0	0.00	0.00	0.00	8	-0.43	0.02	8
	0.00	-0.12	0.02	8			

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

1716.7	0.00	0.00	0.00	8	-0.64	0.02	8
	0.00	-0.21	0.02	8			
1888.3	0.00	0.00	0.00	8	-0.85	0.02	8
	0.00	-0.34	0.02	8			
2060.0	0.00	0.00	0.00	8	-1.07	0.02	8
	0.00	-0.50	0.02	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
171.7	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
343.3	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
515.0	76.25/ 235.62(3-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
686.7	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
858.3	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
1030.0	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
1201.7	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
1373.3	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
1545.0	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
1716.7	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
1888.3	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
2060.0	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 345.0 mm AWAY FROM START SUPPORT
VY = 1.08 MX = 0.02 LD= 8
Provide 2 Legged 8i @ 85 mm c/c

B E A M N O. 24 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1850.0 mm SIZE: 230.0 mm X 230.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.93	0.07	8	-0.05	0.07	8
	0.00	0.00	0.00	8			
154.2	0.00	0.91	0.07	8	-0.24	0.07	8
	0.00	0.00	0.00	8			
308.3	0.00	0.86	0.07	8	-0.44	0.07	8
	0.00	0.00	0.00	8			

ROYAL SHELTER TRICHY-18
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462.5	0.00	0.78	0.07	8	-0.63	0.07	8
	0.00	0.00	0.00	8			
616.7	0.00	0.66	0.07	8	-0.82	0.07	8
	0.00	0.00	0.00	8			
770.8	0.00	0.52	0.07	8	-1.01	0.07	8
	0.00	0.00	0.00	8			
925.0	0.00	0.35	0.07	8	-1.21	0.07	8
	0.00	0.00	0.00	8			
1079.2	0.00	0.15	0.07	8	-1.40	0.07	8
	0.00	0.00	0.00	8			
1233.3	0.00	-0.08	0.07	8	-1.59	0.07	8
	0.00	0.00	0.00	8			
1387.5	0.00	0.00	0.00	8	-1.78	0.07	8
	0.00	-0.34	0.07	8			
1541.7	0.00	0.00	0.00	8	-1.97	0.07	8
	0.00	-0.63	0.07	8			
1695.8	0.00	0.00	0.00	8	-2.17	0.07	8
	0.00	-0.95	0.07	8			
1850.0	0.00	0.00	0.00	8	-2.36	0.07	8
	0.00	-1.30	0.07	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	0.00/ 157.08(2-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
154.2	0.00/ 157.08(2-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
308.3	0.00/ 157.08(2-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
462.5	0.00/ 157.08(2-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
616.7	0.00/ 157.08(2-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
770.8	0.00/ 157.08(2-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
925.0	0.00/ 157.08(2-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
1079.2	0.00/ 157.08(2-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
1233.3	76.25/ 235.62(3-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
1387.5	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
1541.7	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
1695.8	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
1850.0	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 310.0 mm AWAY FROM END SUPPORT
VY = -1.98 MX = 0.07 LD= 8
Provide 2 Legged 8i @ 85 mm c/c

B E A M N O. 25 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

ROYAL SHELTER TRICHY-18 ARCHITECTS PLUS TRICHY

LENGTH: 1600.0 mm SIZE: 230.0 mm X 230.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	1.86	-0.03	8
	0.00	-0.92	-0.03	8			
133.3	0.00	0.00	0.00	8	1.69	-0.03	8
	0.00	-0.68	-0.03	8			
266.7	0.00	0.00	0.00	8	1.52	-0.03	8
	0.00	-0.47	-0.03	8			
400.0	0.00	0.00	0.00	8	1.36	-0.03	8
	0.00	-0.28	-0.03	8			
533.3	0.00	0.00	0.00	8	1.19	-0.03	8
	0.00	-0.11	-0.03	8			
666.7	0.00	0.04	-0.03	8	1.02	-0.03	8
	0.00	0.00	0.00	8			
800.0	0.00	0.16	-0.03	8	0.86	-0.03	8
	0.00	0.00	0.00	8			
933.3	0.00	0.27	-0.03	8	0.69	-0.03	8
	0.00	0.00	0.00	8			
1066.7	0.00	0.35	-0.03	8	0.53	-0.03	8
	0.00	0.00	0.00	8			
1200.0	0.00	0.41	-0.03	8	0.36	-0.03	8
	0.00	0.00	0.00	8			
1333.3	0.00	0.45	-0.03	8	0.19	-0.03	8
	0.00	0.00	0.00	8			
1466.7	0.00	0.46	-0.03	8	0.03	-0.03	8
	0.00	0.00	0.00	8			
1600.0	0.00	0.45	-0.03	8	-0.14	-0.03	8
	0.00	0.00	0.00	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	76.25/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 85 mm
133.3	76.25/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 85 mm
266.7	76.25/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 85 mm
400.0	76.25/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 85 mm
533.3	76.25/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 85 mm
666.7	0.00/ 157.08(2-10i)|	76.25/ 235.62(3-10i)|	8i @ 85 mm
800.0	0.00/ 157.08(2-10i)|	76.25/ 235.62(3-10i)|	8i @ 85 mm
933.3	0.00/ 157.08(2-10i)|	76.25/ 235.62(3-10i)|	8i @ 85 mm
1066.7	0.00/ 157.08(2-10i)|	76.25/ 235.62(3-10i)|	8i @ 85 mm
1200.0	0.00/ 157.08(2-10i)|	76.25/ 235.62(3-10i)|	8i @ 85 mm
1333.3	0.00/ 157.08(2-10i)|	76.25/ 235.62(3-10i)|	8i @ 85 mm
1466.7	0.00/ 157.08(2-10i)|	76.25/ 235.62(3-10i)|	8i @ 85 mm
1600.0	0.00/ 157.08(2-10i)|	76.25/ 235.62(3-10i)|	8i @ 85 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

SHEAR DESIGN RESULTS AT 310.0 mm AWAY FROM START SUPPORT
VY = 1.48 MX = -0.03 LD= 8
Provide 2 Legged 8i @ 85 mm c/c

B E A M N O. 26 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 2060.0 mm SIZE: 230.0 mm X 230.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.57	-0.14	8	-0.33	-0.14	8
	0.00	0.00	0.00	8			
171.7	0.00	0.49	-0.14	8	-0.55	-0.14	8
	0.00	0.00	0.00	8			
343.3	0.00	0.38	-0.14	8	-0.76	-0.14	8
	0.00	0.00	0.00	8			
515.0	0.00	0.23	-0.14	8	-0.98	-0.14	8
	0.00	0.00	0.00	8			
686.7	0.00	0.05	-0.14	8	-1.19	-0.14	8
	0.00	0.00	0.00	8			
858.3	0.00	0.00	0.00	8	-1.40	-0.14	8
	0.00	-0.18	-0.14	8			
1030.0	0.00	0.00	0.00	8	-1.62	-0.14	8
	0.00	-0.44	-0.14	8			
1201.7	0.00	-0.73	-0.14	8	-1.83	-0.14	8
	0.00	0.00	0.00	8			
1373.3	0.00	0.00	0.00	8	-2.05	-0.14	8
	0.00	-1.07	-0.14	8			
1545.0	0.00	0.00	0.00	8	-2.26	-0.14	8
	0.00	-1.44	-0.14	8			
1716.7	0.00	0.00	0.00	8	-2.47	-0.14	8
	0.00	-1.84	-0.14	8			
1888.3	0.00	0.00	0.00	8	-2.69	-0.14	8
	0.00	-2.29	-0.14	8			
2060.0	0.00	0.00	0.00	8	-2.90	-0.14	8
	0.00	-2.77	-0.14	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	0.00/ 157.08(2-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
171.7	0.00/ 157.08(2-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
343.3	0.00/ 157.08(2-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
515.0	0.00/ 157.08(2-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm

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ARCHITECTS PLUS TRICHY

686.7	76.25/ 235.62(3-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
858.3	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
1030.0	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
1201.7	76.25/ 235.62(3-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
1373.3	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
1545.0	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
1716.7	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
1888.3	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
2060.0	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 310.0 mm AWAY FROM END SUPPORT
VY = -2.52 MX = -0.14 LD= 8
Provide 2 Legged 8i @ 85 mm c/c

B E A M N O. 27 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 5530.0 mm SIZE: 230.0 mm X 380.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	7.15	-0.00	8
	0.00	-11.40	-0.00	8			
460.8	0.00	-8.33	-0.00	8	6.20	-0.00	8
	0.00	0.00	0.00	8			
921.7	0.00	0.00	0.00	8	5.25	-0.00	8
	0.00	-5.69	-0.00	8			
1382.5	0.00	0.00	0.00	8	4.30	-0.00	8
	0.00	-3.49	-0.00	8			
1843.3	0.00	0.00	0.00	8	3.35	-0.00	8
	0.00	-1.72	-0.00	8			
2304.2	0.00	0.00	0.00	8	2.40	-0.00	8
	0.00	-0.40	-0.00	8			
2765.0	0.00	0.49	-0.00	8	1.45	-0.00	8
	0.00	0.00	0.00	8			
3225.8	0.00	0.94	-0.00	8	0.50	-0.00	8
	0.00	0.00	0.00	8			
3686.7	0.00	0.95	-0.00	8	-0.44	-0.00	8
	0.00	0.00	0.00	8			
4147.5	0.00	0.53	-0.00	8	-1.39	-0.00	8
	0.00	0.00	0.00	8			
4608.3	0.00	0.00	0.00	8	-2.34	-0.00	8
	0.00	-0.33	-0.00	8			
5069.2	0.00	0.00	0.00	8	-3.29	-0.00	8
	0.00	-1.63	-0.00	8			
5530.0	0.00	0.00	0.00	8	-4.24	-0.00	8
	0.00	-3.36	-0.00	8			

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
460.8	134.90/ 235.62(3-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
921.7	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
1382.5	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
1843.3	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
2304.2	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
2765.0	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
3225.8	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
3686.7	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
4147.5	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
4608.3	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
5069.2	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
5530.0	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 460.0 mm AWAY FROM START SUPPORT
VY = 6.21 MX = -0.00 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

SHEAR DESIGN RESULTS AT 460.0 mm AWAY FROM END SUPPORT
VY = 4.19 MX = -0.00 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

B E A M N O. 28 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 2510.0 mm SIZE: 230.0 mm X 380.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	5.76	-0.24	8
	0.00	-3.65	-0.24	8			
209.2	0.00	0.00	0.00	8	5.33	-0.24	8
	0.00	-2.49	-0.24	8			
418.3	0.00	-1.42	-0.24	8	4.90	-0.24	8
	0.00	0.00	0.00	8			
627.5	0.00	0.00	0.00	8	4.47	-0.24	8
	0.00	-0.44	-0.24	8			

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

836.7	0.00	0.45	-0.24	8		4.04	-0.24	8
	0.00	0.00	0.00	8				
1045.8	0.00	1.25	-0.24	8		3.61	-0.24	8
	0.00	0.00	0.00	8				
1255.0	0.00	1.96	-0.24	8		3.18	-0.24	8
	0.00	0.00	0.00	8				
1464.2	0.00	2.58	-0.24	8		2.75	-0.24	8
	0.00	0.00	0.00	8				
1673.3	0.00	3.11	-0.24	8		2.32	-0.24	8
	0.00	0.00	0.00	8				
1882.5	0.00	3.55	-0.24	8		1.89	-0.24	8
	0.00	0.00	0.00	8				
2091.7	0.00	3.90	-0.24	8		1.46	-0.24	8
	0.00	0.00	0.00	8				
2300.8	0.00	4.16	-0.24	8		1.03	-0.24	8
	0.00	0.00	0.00	8				
2510.0	0.00	4.33	-0.24	8		0.59	-0.24	8
	0.00	0.00	0.00	8				

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
209.2	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
418.3	134.90/ 235.62(3-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
627.5	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
836.7	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1045.8	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1255.0	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1464.2	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1673.3	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1882.5	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
2091.7	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
2300.8	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
2510.0	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 460.0 mm AWAY FROM START SUPPORT
VY = 4.83 MX = -0.24 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

B E A M N O. 29 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3000.0 mm SIZE: 230.0 mm X 380.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	4.33	0.16	8	-0.82	0.16	8
	0.00	0.00	0.00	8			
250.0	0.00	4.06	0.16	8	-1.33	0.16	8
	0.00	0.00	0.00	8			
500.0	0.00	3.67	0.16	8	-1.85	0.16	8
	0.00	0.00	0.00	8			
750.0	0.00	3.14	0.16	8	-2.36	0.16	8
	0.00	0.00	0.00	8			
1000.0	0.00	2.49	0.16	8	-2.88	0.16	8
	0.00	0.00	0.00	8			
1250.0	0.00	1.70	0.16	8	-3.39	0.16	8
	0.00	0.00	0.00	8			
1500.0	0.00	0.79	0.16	8	-3.91	0.16	8
	0.00	0.00	0.00	8			
1750.0	0.00	-0.25	0.16	8	-4.42	0.16	8
	0.00	0.00	0.00	8			
2000.0	0.00	0.00	0.00	8	-4.94	0.16	8
	0.00	-1.42	0.16	8			
2250.0	0.00	0.00	0.00	8	-5.45	0.16	8
	0.00	-2.72	0.16	8			
2500.0	0.00	0.00	0.00	8	-5.96	0.16	8
	0.00	-4.15	0.16	8			
2750.0	0.00	0.00	0.00	8	-6.48	0.16	8
	0.00	-5.70	0.16	8			
3000.0	0.00	0.00	0.00	8	-6.99	0.16	8
	0.00	-7.38	0.16	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	0.00/ 157.08(2-10i)|	134.90/ 235.62(3-10i)|	8i @ 125 mm
250.0	0.00/ 157.08(2-10i)|	134.90/ 235.62(3-10i)|	8i @ 125 mm
500.0	0.00/ 157.08(2-10i)|	134.90/ 235.62(3-10i)|	8i @ 125 mm
750.0	0.00/ 157.08(2-10i)|	134.90/ 235.62(3-10i)|	8i @ 125 mm
1000.0	0.00/ 157.08(2-10i)|	134.90/ 235.62(3-10i)|	8i @ 125 mm
1250.0	0.00/ 157.08(2-10i)|	134.90/ 235.62(3-10i)|	8i @ 125 mm
1500.0	0.00/ 157.08(2-10i)|	134.90/ 235.62(3-10i)|	8i @ 125 mm
1750.0	134.90/ 235.62(3-10i)|	134.90/ 235.62(3-10i)|	8i @ 125 mm
2000.0	134.90/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 125 mm
2250.0	134.90/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 125 mm
2500.0	134.90/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 125 mm
2750.0	134.90/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 125 mm
3000.0	134.90/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 125 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

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SHEAR DESIGN RESULTS AT 460.0 mm AWAY FROM END SUPPORT
VY = -6.06 MX = 0.16 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

B E A M N O. 30 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 5530.0 mm SIZE: 230.0 mm X 380.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	6.52	0.10	8
	0.00	-8.73	0.10	8			
460.8	0.00	0.00	0.00	8	5.57	0.10	8
	0.00	-5.95	0.10	8			
921.7	0.00	-3.60	0.10	8	4.62	0.10	8
	0.00	0.00	0.00	8			
1382.5	0.00	-1.69	0.10	8	3.67	0.10	8
	0.00	0.00	0.00	8			
1843.3	0.00	0.00	0.00	8	2.72	0.10	8
	0.00	-0.22	0.10	8			
2304.2	0.00	0.82	0.10	8	1.77	0.10	8
	0.00	0.00	0.00	8			
2765.0	0.00	1.41	0.10	8	0.82	0.10	8
	0.00	0.00	0.00	8			
3225.8	0.00	1.58	0.10	8	-0.13	0.10	8
	0.00	0.00	0.00	8			
3686.7	0.00	1.30	0.10	8	-1.08	0.10	8
	0.00	0.00	0.00	8			
4147.5	0.00	0.58	0.10	8	-2.02	0.10	8
	0.00	0.00	0.00	8			
4608.3	0.00	0.00	0.00	8	-2.97	0.10	8
	0.00	-0.57	0.10	8			
5069.2	0.00	0.00	0.00	8	-3.92	0.10	8
	0.00	-2.16	0.10	8			
5530.0	0.00	0.00	0.00	8	-4.87	0.10	8
	0.00	-4.18	0.10	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
460.8	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
921.7	134.90/ 235.62(3-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1382.5	134.90/ 235.62(3-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1843.3	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
2304.2	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm

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2765.0	0.00/ 157.08(2-10i)]	134.90/ 235.62(3-10i)]	8i @ 125 mm
3225.8	0.00/ 157.08(2-10i)]	134.90/ 235.62(3-10i)]	8i @ 125 mm
3686.7	0.00/ 157.08(2-10i)]	134.90/ 235.62(3-10i)]	8i @ 125 mm
4147.5	0.00/ 157.08(2-10i)]	134.90/ 235.62(3-10i)]	8i @ 125 mm
4608.3	134.90/ 235.62(3-10i)]	0.00/ 157.08(2-10i)]	8i @ 125 mm
5069.2	134.90/ 235.62(3-10i)]	0.00/ 157.08(2-10i)]	8i @ 125 mm
5530.0	134.90/ 235.62(3-10i)]	0.00/ 157.08(2-10i)]	8i @ 125 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 460.0 mm AWAY FROM START SUPPORT
VY = 5.58 MX = 0.10 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

SHEAR DESIGN RESULTS AT 535.0 mm AWAY FROM END SUPPORT
VY = -3.78 MX = 0.10 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

B E A M N O. 31 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 2510.0 mm SIZE: 230.0 mm X 300.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	1.33	0.24	8	0.72	0.24	8
	0.00	0.00	0.00	8			
209.2	0.00	1.44	0.24	8	0.38	0.24	8
	0.00	0.00	0.00	8			
418.3	0.00	1.49	0.24	8	0.04	0.24	8
	0.00	0.00	0.00	8			
627.5	0.00	1.46	0.24	8	-0.30	0.24	8
	0.00	0.00	0.00	8			
836.7	0.00	1.36	0.24	8	-0.64	0.24	8
	0.00	0.00	0.00	8			
1045.8	0.00	1.20	0.24	8	-0.98	0.24	8
	0.00	0.00	0.00	8			
1255.0	0.00	0.96	0.24	8	-1.32	0.24	8
	0.00	0.00	0.00	8			
1464.2	0.00	0.64	0.24	8	-1.66	0.24	8
	0.00	0.00	0.00	8			
1673.3	0.00	0.26	0.24	8	-2.00	0.24	8
	0.00	0.00	0.00	8			
1882.5	0.00	0.00	0.00	8	-2.34	0.24	8
	0.00	-0.19	0.24	8			
2091.7	0.00	0.00	0.00	8	-2.68	0.24	8
	0.00	-0.71	0.24	8			
2300.8	0.00	0.00	0.00	8	-3.02	0.24	8
	0.00	-1.31	0.24	8			

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

2510.0	0.00	0.00	0.00	8	-3.36	0.24	8
	0.00	-1.98	0.24	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	0.00/ 157.08(2-10i)|	103.62/ 235.62(3-10i)|	8i @ 105 mm
209.2	0.00/ 157.08(2-10i)|	103.62/ 235.62(3-10i)|	8i @ 105 mm
418.3	0.00/ 157.08(2-10i)|	103.62/ 235.62(3-10i)|	8i @ 105 mm
627.5	0.00/ 157.08(2-10i)|	103.62/ 235.62(3-10i)|	8i @ 105 mm
836.7	0.00/ 157.08(2-10i)|	103.62/ 235.62(3-10i)|	8i @ 105 mm
1045.8	0.00/ 157.08(2-10i)|	103.62/ 235.62(3-10i)|	8i @ 105 mm
1255.0	0.00/ 157.08(2-10i)|	103.62/ 235.62(3-10i)|	8i @ 105 mm
1464.2	0.00/ 157.08(2-10i)|	103.62/ 235.62(3-10i)|	8i @ 105 mm
1673.3	103.62/ 235.62(3-10i)|	103.62/ 235.62(3-10i)|	8i @ 105 mm
1882.5	103.62/ 235.62(3-10i)|	103.62/ 235.62(3-10i)|	8i @ 105 mm
2091.7	103.62/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 105 mm
2300.8	103.62/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 105 mm
2510.0	103.62/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 105 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 455.0 mm AWAY FROM START SUPPORT
VY = -0.01 MX = 0.24 LD= 8
Provide 2 Legged 8i @ 105 mm c/c

SHEAR DESIGN RESULTS AT 415.0 mm AWAY FROM END SUPPORT
VY = -2.69 MX = 0.24 LD= 8
Provide 2 Legged 8i @ 105 mm c/c

B E A M N O. 32 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3000.0 mm SIZE: 230.0 mm X 300.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	1.64	-0.42	8
	0.00	-0.22	-0.42	8			
250.0	0.00	0.14	-0.42	8	1.24	-0.42	8
	0.00	0.00	0.00	8			
500.0	0.00	0.40	-0.42	8	0.83	-0.42	8

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750.0	0.00	0.56	-0.42	8		0.42	-0.42	8
	0.00	0.00	0.00	8				
1000.0	0.00	0.61	-0.42	8		0.02	-0.42	8
	0.00	0.00	0.00	8				
1250.0	0.00	0.57	-0.42	8		-0.39	-0.42	8
	0.00	0.00	0.00	8				
1500.0	0.00	0.42	-0.42	8		-0.80	-0.42	8
	0.00	0.00	0.00	8				
1750.0	0.00	0.17	-0.42	8		-1.20	-0.42	8
	0.00	0.00	0.00	8				
2000.0	0.00	0.00	0.00	8		-1.61	-0.42	8
	0.00	-0.18	-0.42	8				
2250.0	0.00	0.00	0.00	8		-2.02	-0.42	8
	0.00	-0.64	-0.42	8				
2500.0	0.00	0.00	0.00	8		-2.42	-0.42	8
	0.00	-1.19	-0.42	8				
2750.0	0.00	0.00	0.00	8		-2.83	-0.42	8
	0.00	-1.85	-0.42	8				
3000.0	0.00	0.00	0.00	8		-3.23	-0.42	8
	0.00	-2.60	-0.42	8				

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
250.0	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
500.0	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
750.0	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
1000.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
1250.0	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
1500.0	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
1750.0	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
2000.0	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
2250.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
2500.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
2750.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
3000.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 415.0 mm AWAY FROM START SUPPORT
VY = 0.98 MX = -0.42 LD= 8
Provide 2 Legged 8i @ 105 mm c/c

SHEAR DESIGN RESULTS AT 380.0 mm AWAY FROM END SUPPORT
VY = -2.62 MX = -0.42 LD= 8
Provide 2 Legged 8i @ 105 mm c/c

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

B E A M N O. 34 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 4860.0 mm SIZE: 230.0 mm X 530.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	8.63	0.87	8
	0.00	-12.28	0.87	8			
405.0	0.00	0.00	0.00	8	7.47	0.87	8
	0.00	-9.02	0.87	8			
810.0	0.00	-6.23	0.87	8	6.31	0.87	8
	0.00	0.00	0.00	8			
1215.0	0.00	0.00	0.00	8	5.14	0.87	8
	0.00	-3.91	0.87	8			
1620.0	0.00	0.00	0.00	8	3.98	0.87	8
	0.00	-2.06	0.87	8			
2025.0	0.00	0.00	0.00	8	2.82	0.87	8
	0.00	-0.69	0.87	8			
2430.0	0.00	0.22	0.87	8	1.65	0.87	8
	0.00	0.00	0.00	8			
2835.0	0.00	0.65	0.87	8	0.49	0.87	8
	0.00	0.00	0.00	8			
3240.0	0.00	0.61	0.87	8	-0.67	0.87	8
	0.00	0.00	0.00	8			
3645.0	0.00	0.11	0.87	8	-1.84	0.87	8
	0.00	0.00	0.00	8			
4050.0	0.00	0.00	0.00	8	-3.00	0.87	8
	0.00	-0.87	0.87	8			
4455.0	0.00	0.00	0.00	8	-4.16	0.87	8
	0.00	-2.32	0.87	8			
4860.0	0.00	0.00	0.00	8	-5.33	0.87	8
	0.00	-4.25	0.87	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	193.54/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 160 mm
405.0	193.54/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 160 mm
810.0	193.15/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
1215.0	193.54/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 160 mm
1620.0	193.54/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 160 mm
2025.0	193.15/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
2430.0	193.15/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
2835.0	193.15/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
3240.0	193.15/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
3645.0	193.15/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
4050.0	193.15/ 226.19(2-12i)	193.15/ 226.19(2-12i)	8i @ 160 mm
4455.0	193.54/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 160 mm
4860.0	193.54/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 160 mm

ARCHITECTS PLUS TRICHY
ROYAL SHELTER TRICHY-18

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 684.0 mm AWAY FROM START SUPPORT
VY = 6.68 MX = 0.87 LD= 8
Provide 2 Legged 8i @ 160 mm c/c

SHEAR DESIGN RESULTS AT 724.0 mm AWAY FROM END SUPPORT
VY = -3.26 MX = 0.87 LD= 8
Provide 2 Legged 8i @ 160 mm c/c

B E A M N O. 35 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 4040.0 mm SIZE: 230.0 mm X 380.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	3.74	0.32	8
	0.00	-1.36	0.32	8			
336.7	0.00	0.00	0.00	8	3.05	0.32	8
	0.00	-0.22	0.32	8			
673.3	0.00	0.69	0.32	8	2.35	0.32	8
	0.00	0.00	0.00	8			
1010.0	0.00	1.36	0.32	8	1.66	0.32	8
	0.00	0.00	0.00	8			
1346.7	0.00	1.81	0.32	8	0.97	0.32	8
	0.00	0.00	0.00	8			
1683.3	0.00	2.01	0.32	8	0.27	0.32	8
	0.00	0.00	0.00	8			
2020.0	0.00	1.99	0.32	8	-0.42	0.32	8
	0.00	0.00	0.00	8			
2356.7	0.00	1.73	0.32	8	-1.11	0.32	8
	0.00	0.00	0.00	8			
2693.3	0.00	1.24	0.32	8	-1.81	0.32	8
	0.00	0.00	0.00	8			
3030.0	0.00	0.51	0.32	8	-2.50	0.32	8
	0.00	0.00	0.00	8			
3366.7	0.00	0.00	0.00	8	-3.19	0.32	8
	0.00	-0.45	0.32	8			
3703.3	0.00	0.00	0.00	8	-3.89	0.32	8
	0.00	-1.64	0.32	8			
4040.0	0.00	0.00	0.00	8	-4.58	0.32	8
	0.00	-3.06	0.32	8			

SUMMARY OF REINF. AREA (Sq.mm)

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
336.7	134.90/ 235.62(3-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
673.3	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1010.0	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1346.7	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1683.3	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
2020.0	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
2356.7	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
2693.3	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
3030.0	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
3366.7	134.90/ 235.62(3-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
3703.3	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
4040.0	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 575.0 mm AWAY FROM START SUPPORT
VY = 2.57 MX = 0.32 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

SHEAR DESIGN RESULTS AT 535.0 mm AWAY FROM END SUPPORT
VY = -3.49 MX = 0.32 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

B E A M N O. 36 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3960.0 mm SIZE: 230.0 mm X 300.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	2.57	-0.29	8
	0.00	-1.23	-0.29	8			
330.0	0.00	0.00	0.00	8	2.04	-0.29	8
	0.00	-0.47	-0.29	8			
660.0	0.00	0.11	-0.29	8	1.50	-0.29	8
	0.00	0.00	0.00	8			
990.0	0.00	0.52	-0.29	8	0.96	-0.29	8
	0.00	0.00	0.00	8			
1320.0	0.00	0.75	-0.29	8	0.43	-0.29	8
	0.00	0.00	0.00	8			
1650.0	0.00	0.80	-0.29	8	-0.11	-0.29	8
	0.00	0.00	0.00	8			
1980.0	0.00	0.68	-0.29	8	-0.64	-0.29	8
	0.00	0.00	0.00	8			

ARCHITECTS PLUS TRICHY
ROYAL SHELTER TRICHY-18

2310.0	0.00	0.38	-0.29	8		-1.18	-0.29	8
	0.00	0.00	0.00	8				
2640.0	0.00	0.00	0.00	8		-1.72	-0.29	8
	0.00	-0.10	-0.29	8				
2970.0	0.00	0.00	0.00	8		-2.25	-0.29	8
	0.00	-0.76	-0.29	8				
3300.0	0.00	0.00	0.00	8		-2.79	-0.29	8
	0.00	-1.59	-0.29	8				
3630.0	0.00	0.00	0.00	8		-3.33	-0.29	8
	0.00	-2.60	-0.29	8				
3960.0	0.00	0.00	0.00	8		-3.86	-0.29	8
	0.00	-3.79	-0.29	8				

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
330.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
660.0	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
990.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
1320.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
1650.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
1980.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
2310.0	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
2640.0	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
2970.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
3300.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
3630.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
3960.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 455.0 mm AWAY FROM START SUPPORT
VY = 1.84 MX = -0.29 LD= 8
Provide 2 Legged 8i @ 105 mm c/c

SHEAR DESIGN RESULTS AT 455.0 mm AWAY FROM END SUPPORT
VY = -3.13 MX = -0.29 LD= 8
Provide 2 Legged 8i @ 105 mm c/c

B E A M N O. 39 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 4860.0 mm SIZE: 230.0 mm X 380.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	5.89	-0.22	8
	0.00	-8.48	-0.22	8			
405.0	0.00	0.00	0.00	8	5.06	-0.22	8
	0.00	-6.26	-0.22	8			
810.0	0.00	0.00	0.00	8	4.23	-0.22	8
	0.00	-4.38	-0.22	8			
1215.0	0.00	-2.84	-0.22	8	3.39	-0.22	8
	0.00	0.00	0.00	8			
1620.0	0.00	-1.63	-0.22	8	2.56	-0.22	8
	0.00	0.00	0.00	8			
2025.0	0.00	0.00	0.00	8	1.72	-0.22	8
	0.00	-0.77	-0.22	8			
2430.0	0.00	0.00	0.00	8	0.89	-0.22	8
	0.00	-0.24	-0.22	8			
2835.0	0.00	0.00	0.00	8	0.06	-0.22	8
	0.00	-0.05	-0.22	8			
3240.0	0.00	0.00	0.00	8	-0.78	-0.22	8
	0.00	-0.19	-0.22	8			
3645.0	0.00	0.00	0.00	8	-1.61	-0.22	8
	0.00	-0.68	-0.22	8			
4050.0	0.00	0.00	0.00	8	-2.45	-0.22	8
	0.00	-1.50	-0.22	8			
4455.0	0.00	0.00	0.00	8	-3.28	-0.22	8
	0.00	-2.66	-0.22	8			
4860.0	0.00	0.00	0.00	8	-4.11	-0.22	8
	0.00	-4.15	-0.22	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
405.0	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
810.0	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
1215.0	134.90/ 235.62(3-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1620.0	134.90/ 235.62(3-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
2025.0	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
2430.0	134.90/ 235.62(3-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
2835.0	134.90/ 235.62(3-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
3240.0	134.90/ 235.62(3-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
3645.0	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
4050.0	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
4455.0	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
4860.0	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 460.0 mm AWAY FROM START SUPPORT
VY = 4.96 MX = -0.22 LD= 8

ARCHITECTS PLUS TRICHY
ROYAL SHELTER TRICHY-18

Provide 2 Legged 8i @ 125 mm c/c

SHEAR DESIGN RESULTS AT 460.0 mm AWAY FROM END SUPPORT
VY = -3.18 MX = -0.22 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

B E A M N O. 40 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1830.0 mm SIZE: 230.0 mm X 380.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.39	0.43	8	3.12	0.43	8
	0.00	0.00	0.00	8			
152.5	0.00	0.84	0.43	8	2.81	0.43	8
	0.00	0.00	0.00	8			
305.0	0.00	1.25	0.43	8	2.49	0.43	8
	0.00	0.00	0.00	8			
457.5	0.00	1.60	0.43	8	2.18	0.43	8
	0.00	0.00	0.00	8			
610.0	0.00	1.91	0.43	8	1.86	0.43	8
	0.00	0.00	0.00	8			
762.5	0.00	2.17	0.43	8	1.55	0.43	8
	0.00	0.00	0.00	8			
915.0	0.00	2.38	0.43	8	1.24	0.43	8
	0.00	0.00	0.00	8			
1067.5	0.00	2.55	0.43	8	0.92	0.43	8
	0.00	0.00	0.00	8			
1220.0	0.00	2.67	0.43	8	0.61	0.43	8
	0.00	0.00	0.00	8			
1372.5	0.00	2.73	0.43	8	0.29	0.43	8
	0.00	0.00	0.00	8			
1525.0	0.00	2.76	0.43	8	-0.02	0.43	8
	0.00	0.00	0.00	8			
1677.5	0.00	2.73	0.43	8	-0.33	0.43	8
	0.00	0.00	0.00	8			
1830.0	0.00	2.65	0.43	8	-0.65	0.43	8
	0.00	0.00	0.00	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	134.90/ 235.62(3-10i)|	134.90/ 235.62(3-10i)|	8i @ 125 mm
152.5	0.00/ 157.08(2-10i)|	134.90/ 235.62(3-10i)|	8i @ 125 mm
305.0	0.00/ 157.08(2-10i)|	134.90/ 235.62(3-10i)|	8i @ 125 mm
457.5	0.00/ 157.08(2-10i)|	134.90/ 235.62(3-10i)|	8i @ 125 mm

ARCHITECTS PLUS TRICHY
ROYAL SHELTER TRICHY-18

610.0	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
762.5	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
915.0	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1067.5	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1220.0	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1372.5	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1525.0	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1677.5	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1830.0	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 460.0 mm AWAY FROM START SUPPORT
VY = 2.18 MX = 0.43 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

B E A M N O. 41 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 2210.0 mm SIZE: 230.0 mm X 380.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	2.72	-0.50	8	-0.60	-0.50	8
	0.00	0.00	0.00	8			
184.2	0.00	2.58	-0.50	8	-0.97	-0.50	8
	0.00	0.00	0.00	8			
368.3	0.00	2.37	-0.50	8	-1.35	-0.50	8
	0.00	0.00	0.00	8			
552.5	0.00	2.08	-0.50	8	-1.73	-0.50	8
	0.00	0.00	0.00	8			
736.7	0.00	1.73	-0.50	8	-2.11	-0.50	8
	0.00	0.00	0.00	8			
920.8	0.00	1.30	-0.50	8	-2.49	-0.50	8
	0.00	0.00	0.00	8			
1105.0	0.00	0.81	-0.50	8	-2.87	-0.50	8
	0.00	0.00	0.00	8			
1289.2	0.00	0.25	-0.50	8	-3.25	-0.50	8
	0.00	0.00	0.00	8			
1473.3	0.00	-0.39	-0.50	8	-3.63	-0.50	8
	0.00	0.00	0.00	8			
1657.5	0.00	0.00	0.00	8	-4.01	-0.50	8
	0.00	-1.09	-0.50	8			
1841.7	0.00	0.00	0.00	8	-4.39	-0.50	8
	0.00	-1.86	-0.50	8			
2025.8	0.00	0.00	0.00	8	-4.77	-0.50	8
	0.00	-2.71	-0.50	8			
2210.0	0.00	0.00	0.00	8	-5.15	-0.50	8
	0.00	-3.62	-0.50	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
184.2	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
368.3	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
552.5	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
736.7	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
920.8	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1105.0	0.00/ 157.08(2-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1289.2	134.90/ 235.62(3-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1473.3	134.90/ 235.62(3-10i)	134.90/ 235.62(3-10i)	8i @ 125 mm
1657.5	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
1841.7	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
2025.8	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm
2210.0	134.90/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 125 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 575.0 mm AWAY FROM END SUPPORT
VY = -3.97 MX = -0.50 LD= 8
Provide 2 Legged 8i @ 125 mm c/c

B E A M N O. 42 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3960.0 mm SIZE: 230.0 mm X 300.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	2.39	0.05	8
	0.00	-1.06	0.05	8			
330.0	0.00	0.00	0.00	8	1.85	0.05	8
	0.00	-0.36	0.05	8			
660.0	0.00	0.17	0.05	8	1.32	0.05	8
	0.00	0.00	0.00	8			
990.0	0.00	0.51	0.05	8	0.78	0.05	8
	0.00	0.00	0.00	8			
1320.0	0.00	0.68	0.05	8	0.24	0.05	8
	0.00	0.00	0.00	8			
1650.0	0.00	0.68	0.05	8	-0.29	0.05	8
	0.00	0.00	0.00	8			

1980.0	0.00	0.49	0.05	8		-0.83	0.05	8
	0.00	0.00	0.00	8				
2310.0	0.00	0.13	0.05	8		-1.36	0.05	8
	0.00	0.00	0.00	8				
2640.0	0.00	-0.41	0.05	8		-1.90	0.05	8
	0.00	0.00	0.00	8				
2970.0	0.00	0.00	0.00	8		-2.44	0.05	8
	0.00	-1.13	0.05	8				
3300.0	0.00	0.00	0.00	8		-2.97	0.05	8
	0.00	-2.02	0.05	8				
3630.0	0.00	0.00	0.00	8		-3.51	0.05	8
	0.00	-3.09	0.05	8				
3960.0	0.00	0.00	0.00	8		-4.05	0.05	8
	0.00	-4.34	0.05	8				

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
330.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
660.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
990.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
1320.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
1650.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
1980.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
2310.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
2640.0	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
2970.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
3300.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
3630.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
3960.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 495.0 mm AWAY FROM START SUPPORT
VY = 1.59 MX = 0.05 LD= 8
Provide 2 Legged 8i @ 105 mm c/c

SHEAR DESIGN RESULTS AT 380.0 mm AWAY FROM END SUPPORT
VY = -3.44 MX = 0.05 LD= 8
Provide 2 Legged 8i @ 105 mm c/c

B E A M N O. 43 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1830.0 mm SIZE: 230.0 mm X 230.0 mm COVER: 30.0 mm

ARCHITECTS PLUS TRICHY
ROYAL SHELTER TRICHY-18

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.25	0.02	8	0.30	0.02	8
	0.00	0.00	0.00	8			
152.5	0.00	0.28	0.02	8	0.11	0.02	8
	0.00	0.00	0.00	8			
305.0	0.00	0.29	0.02	8	-0.08	0.02	8
	0.00	0.00	0.00	8			
457.5	0.00	0.26	0.02	8	-0.27	0.02	8
	0.00	0.00	0.00	8			
610.0	0.00	0.20	0.02	8	-0.46	0.02	8
	0.00	0.00	0.00	8			
762.5	0.00	0.12	0.02	8	-0.65	0.02	8
	0.00	0.00	0.00	8			
915.0	0.00	0.01	0.02	8	-0.84	0.02	8
	0.00	0.00	0.00	8			
1067.5	0.00	-0.14	0.02	8	-1.03	0.02	8
	0.00	0.00	0.00	8			
1220.0	0.00	0.00	0.00	8	-1.22	0.02	8
	0.00	-0.31	0.02	8			
1372.5	0.00	0.00	0.00	8	-1.41	0.02	8
	0.00	-0.51	0.02	8			
1525.0	0.00	0.00	0.00	8	-1.60	0.02	8
	0.00	-0.74	0.02	8			
1677.5	0.00	0.00	0.00	8	-1.79	0.02	8
	0.00	-1.00	0.02	8			
1830.0	0.00	0.00	0.00	8	-1.98	0.02	8
	0.00	-1.28	0.02	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	0.00/ 157.08(2-10i)|	76.25/ 235.62(3-10i)|	8i @ 85 mm
152.5	0.00/ 157.08(2-10i)|	76.25/ 235.62(3-10i)|	8i @ 85 mm
305.0	0.00/ 157.08(2-10i)|	76.25/ 235.62(3-10i)|	8i @ 85 mm
457.5	0.00/ 157.08(2-10i)|	76.25/ 235.62(3-10i)|	8i @ 85 mm
610.0	0.00/ 157.08(2-10i)|	76.25/ 235.62(3-10i)|	8i @ 85 mm
762.5	0.00/ 157.08(2-10i)|	76.25/ 235.62(3-10i)|	8i @ 85 mm
915.0	76.25/ 235.62(3-10i)|	76.25/ 235.62(3-10i)|	8i @ 85 mm
1067.5	76.25/ 235.62(3-10i)|	76.25/ 235.62(3-10i)|	8i @ 85 mm
1220.0	76.25/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 85 mm
1372.5	76.25/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 85 mm
1525.0	76.25/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 85 mm
1677.5	76.25/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 85 mm
1830.0	76.25/ 235.62(3-10i)|	0.00/ 157.08(2-10i)|	8i @ 85 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

ARCHITECTS PLUS TRICHY
ROYAL SHELTER TRICHY-18

SHEAR DESIGN RESULTS AT 310.0 mm AWAY FROM END SUPPORT
VY = -1.60 MX = 0.02 LD= 8
Provide 2 Legged 8i @ 85 mm c/c

B E A M N O. 44 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3960.0 mm SIZE: 230.0 mm X 300.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.40	-0.01	8	1.41	-0.01	8
	0.00	0.00	0.00	8			
330.0	0.00	0.78	-0.01	8	0.87	-0.01	8
	0.00	0.00	0.00	8			
660.0	0.00	0.98	-0.01	8	0.34	-0.01	8
	0.00	0.00	0.00	8			
990.0	0.00	1.01	-0.01	8	-0.20	-0.01	8
	0.00	0.00	0.00	8			
1320.0	0.00	0.85	-0.01	8	-0.73	-0.01	8
	0.00	0.00	0.00	8			
1650.0	0.00	0.52	-0.01	8	-1.27	-0.01	8
	0.00	0.00	0.00	8			
1980.0	0.00	0.01	-0.01	8	-1.81	-0.01	8
	0.00	0.00	0.00	8			
2310.0	0.00	0.00	0.00	8	-2.34	-0.01	8
	0.00	-0.67	-0.01	8			
2640.0	0.00	-1.53	-0.01	8	-2.88	-0.01	8
	0.00	0.00	0.00	8			
2970.0	0.00	0.00	0.00	8	-3.42	-0.01	8
	0.00	-2.57	-0.01	8			
3300.0	0.00	0.00	0.00	8	-3.95	-0.01	8
	0.00	-3.79	-0.01	8			
3630.0	0.00	0.00	0.00	8	-4.49	-0.01	8
	0.00	-5.18	-0.01	8			
3960.0	0.00	0.00	0.00	8	-5.03	-0.01	8
	0.00	-6.75	-0.01	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
330.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
660.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
990.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
1320.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
1650.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

1980.0	0.00/ 157.08(2-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
2310.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
2640.0	103.62/ 235.62(3-10i)	103.62/ 235.62(3-10i)	8i @ 105 mm
2970.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
3300.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
3630.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm
3960.0	103.62/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 105 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 380.0 mm AWAY FROM END SUPPORT
VY = -4.42 MX = -0.01 LD= 8
Provide 2 Legged 8i @ 105 mm c/c

B E A M N O. 45 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1830.0 mm SIZE: 230.0 mm X 230.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	2.08	0.12	8
	0.00	-1.62	0.12	8			
152.5	0.00	0.00	0.00	8	1.89	0.12	8
	0.00	-1.31	0.12	8			
305.0	0.00	-1.04	0.12	8	1.70	0.12	8
	0.00	0.00	0.00	8			
457.5	0.00	0.00	0.00	8	1.51	0.12	8
	0.00	-0.79	0.12	8			
610.0	0.00	0.00	0.00	8	1.32	0.12	8
	0.00	-0.58	0.12	8			
762.5	0.00	0.00	0.00	8	1.13	0.12	8
	0.00	-0.39	0.12	8			
915.0	0.00	-0.23	0.12	8	0.94	0.12	8
	0.00	0.00	0.00	8			
1067.5	0.00	-0.10	0.12	8	0.75	0.12	8
	0.00	0.00	0.00	8			
1220.0	0.00	0.00	0.00	8	0.56	0.12	8
	0.00	-0.00	0.12	8			
1372.5	0.00	0.07	0.12	8	0.37	0.12	8
	0.00	0.00	0.00	8			
1525.0	0.00	0.11	0.12	8	0.18	0.12	8
	0.00	0.00	0.00	8			
1677.5	0.00	0.13	0.12	8	-0.01	0.12	8
	0.00	0.00	0.00	8			
1830.0	0.00	0.11	0.12	8	-0.20	0.12	8
	0.00	0.00	0.00	8			

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
152.5	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
305.0	76.25/ 235.62(3-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
457.5	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
610.0	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
762.5	76.25/ 235.62(3-10i)	0.00/ 157.08(2-10i)	8i @ 85 mm
915.0	76.25/ 235.62(3-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
1067.5	76.25/ 235.62(3-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
1220.0	76.25/ 235.62(3-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
1372.5	76.25/ 235.62(3-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
1525.0	76.25/ 235.62(3-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
1677.5	76.25/ 235.62(3-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm
1830.0	76.25/ 235.62(3-10i)	76.25/ 235.62(3-10i)	8i @ 85 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 310.0 mm AWAY FROM START SUPPORT
VY = 1.70 MX = 0.12 LD= 8
Provide 2 Legged 8i @ 85 mm c/c

B E A M N O. 46 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 4860.0 mm SIZE: 230.0 mm X 530.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	10.44	-0.23	8
	0.00	-12.89	-0.23	8			
405.0	0.00	-8.90	-0.23	8	9.28	-0.23	8
	0.00	0.00	0.00	8			
810.0	0.00	-5.38	-0.23	8	8.12	-0.23	8
	0.00	0.00	0.00	8			
1215.0	0.00	0.00	0.00	8	6.95	-0.23	8
	0.00	-2.33	-0.23	8			
1620.0	0.00	0.25	-0.23	8	5.79	-0.23	8
	0.00	0.00	0.00	8			
2025.0	0.00	2.36	-0.23	8	4.63	-0.23	8
	0.00	0.00	0.00	8			
2430.0	0.00	4.00	-0.23	8	3.46	-0.23	8
	0.00	0.00	0.00	8			

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

2835.0	0.00	5.17	-0.23	8		2.30	-0.23	8
	0.00	0.00	0.00	8				
3240.0	0.00	5.86	-0.23	8		1.14	-0.23	8
	0.00	0.00	0.00	8				
3645.0	0.00	6.09	-0.23	8		-0.03	-0.23	8
	0.00	0.00	0.00	8				
4050.0	0.00	5.84	-0.23	8		-1.19	-0.23	8
	0.00	0.00	0.00	8				
4455.0	0.00	5.12	-0.23	8		-2.35	-0.23	8
	0.00	0.00	0.00	8				
4860.0	0.00	3.94	-0.23	8		-3.52	-0.23	8
	0.00	0.00	0.00	8				

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	193.54/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 160 mm
405.0	193.15/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
810.0	193.15/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
1215.0	193.54/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 160 mm
1620.0	193.15/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
2025.0	0.00/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
2430.0	0.00/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
2835.0	0.00/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
3240.0	0.00/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
3645.0	0.00/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
4050.0	0.00/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
4455.0	0.00/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
4860.0	0.00/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 724.0 mm AWAY FROM START SUPPORT
VY = 8.37 MX = -0.23 LD= 8
Provide 2 Legged 8i @ 160 mm c/c

B E A M N O. 47 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1830.0 mm SIZE: 230.0 mm X 530.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case

ARCHITECTS PLUS TRICHY
ROYAL SHELTER TRICHY-18

0.0	0.00	3.92	-0.74	8	-4.58	-0.74	8
	0.00	0.00	0.00	8			
152.5	0.00	3.19	-0.74	8	-5.02	-0.74	8
	0.00	0.00	0.00	8			
305.0	0.00	2.39	-0.74	8	-5.46	-0.74	8
	0.00	0.00	0.00	8			
457.5	0.00	1.52	-0.74	8	-5.90	-0.74	8
	0.00	0.00	0.00	8			
610.0	0.00	0.59	-0.74	8	-6.34	-0.74	8
	0.00	0.00	0.00	8			
762.5	0.00	0.00	0.00	8	-6.77	-0.74	8
	0.00	-0.41	-0.74	8			
915.0	0.00	-1.48	-0.74	8	-7.21	-0.74	8
	0.00	0.00	0.00	8			
1067.5	0.00	-2.61	-0.74	8	-7.65	-0.74	8
	0.00	0.00	0.00	8			
1220.0	0.00	0.00	0.00	8	-8.09	-0.74	8
	0.00	-3.81	-0.74	8			
1372.5	0.00	0.00	0.00	8	-8.53	-0.74	8
	0.00	-5.08	-0.74	8			
1525.0	0.00	0.00	0.00	8	-8.96	-0.74	8
	0.00	-6.41	-0.74	8			
1677.5	0.00	0.00	0.00	8	-9.40	-0.74	8
	0.00	-7.81	-0.74	8			
1830.0	0.00	0.00	0.00	8	-9.84	-0.74	8
	0.00	-9.28	-0.74	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	0.00/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
152.5	0.00/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
305.0	0.00/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
457.5	0.00/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
610.0	193.15/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
762.5	193.15/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
915.0	193.15/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
1067.5	193.15/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 160 mm
1220.0	193.15/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 160 mm
1372.5	193.15/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 160 mm
1525.0	193.15/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 160 mm
1677.5	193.15/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 160 mm
1830.0	193.15/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 160 mm

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 724.0 mm AWAY FROM END SUPPORT
VY = 17.77 MX = -0.74 LD= 8
Provide 2 Legged 8i @ 160 mm c/c

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

PROPOSED CLUB HOUSE AT ,COIMBATORE FOR M/s. ROYAL SHELTER. –BEAM DESIGN

Beam Size: 450x450mm, Grade of Concrete: M35, Grade of Steel: Fe500

Mu @ Support = 100 kN-m Mu @ Span = 80 kN-m Vu= 115 kN

Mu @ Support = 100 kN-m

Mu/bd^2 = 1.320 Pt= 0.33% Ast= 670 mm^2

Reinforcement required = 3T16+2T12

Hence provided is safe.

Mu @ Span = 80 kN-m

Mu/bd^2 = 1.06 Pt= 0.28% Ast= 568 mm^2

Reinforcement required = 3T16

Hence provided is safe.

SFD = 115, Φ of Bar = 8mm, Leg = 2

Spacing of Shear with 8Φ = 0.87*500*2*50.3*417/(115*1000)

= 158mm

Hence provided Shear Reinforcement = 3LT8@150c/c

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

ANNEXURE-F

RC DESIGN OF SLAB

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

One way slab design

ARCHITECT PLUS
TRICHY

Slab no: 1

1	Panel size								
		Lx	3.47						
		Ly	6.32						
2	Slab type								
		1	Ly/Lx	>1.8	ONE WAY SLAB		ONE WAY SLAB		
3	Depth								
		IF							
		a	s.s slab	28					
		b	continious	32					
4	Depth								
		Lx/d							
			d=Lx/a (or) b	0.108438	108.4375	mm	102		
5	Over all depth								
			D= d+c.c+Ø/2		127	5			
6	Load calculation								
	1	Self weight	DX25		3.175	Kn/m^2			
	2	Live load	As per is 875 part 2		3	Kn/m^2			
	3	Floor Finish	As per is 875 part 2		1.5	Kn/m^2			
	4	Total load	1+2+3		7.675	Kn/m^2			
	5	ultimate load	1.5x(4)	=	11.5125	Kn/m^2			
7	Moment								
		$Mu=W_u l^2/8$		17.32761	KN.m				
8	Req.depth								
		$Mu=0.138fckbd^2$							
		$dreq=(Mu/0.138fckb)^{1/2}$		5022.495	70.8695631	mm			
9	Depth Check								
		if d > dreq							
		SAFE OK							
10	Reinforcement detail								
		Grade of steel=		500	N/mm2				
		dia of main rod =		10	mm				
		$Mu/bd^2=$	1.665475553	N/mm^2					
		P_t=table 3	0.082		**Min Rein=**	**$0.85*b*d/f_y$**		173.4	mm^2
		Ast= $P_t bd/100$	83.64	200	mm^2	**Max.spac=300mm**			
		dia of rod=	10	mm		**Min.spac=75mm**			
		Area of rod=	78.5	78.5	mm^2				
		Spacing=	392.5	250	9.84251969	inches			
11	Distribution Rod								
		.12%of cross sectional area							
		152.4		200	mm^2				
		dia of rod=	10	mm					
		Area of rod=	78.5	mm^2					
		Spacing=	392.5	15.45276	inches				

ROYAL SHELTER ★ TRICHY-18 ★

ARCHITECTS PLUS ★ TRICHY ★

12	Check for shear								
		V_u=WuLx/2	19.9741875	Kn					
		T_v=Vu/bd	0.195825368	N/mm^2					
		P_t=100Ast/bd	0.082						
		T_c =Table 19 frm is 4	0.6	N/mm^2					
		k= pg. 72 is 456	1.3						
		T_c=	0.78	N/mm^2					
		$T_c>T_v$							
			SAFE OK						

13 Deflection check

$(L/d)_{bsic}$=26 20

$L/d_{Max}=(L/d)_{bsic}xK_txK_cx$

K_r 40 K_r=fig 4

L/d(act)= 34.01960784

$(L/d)_{max}>(L/d)_{act}$

SAFE OK

f_s=	121.278
K_t=	2
K_c=	1
K_f=	1

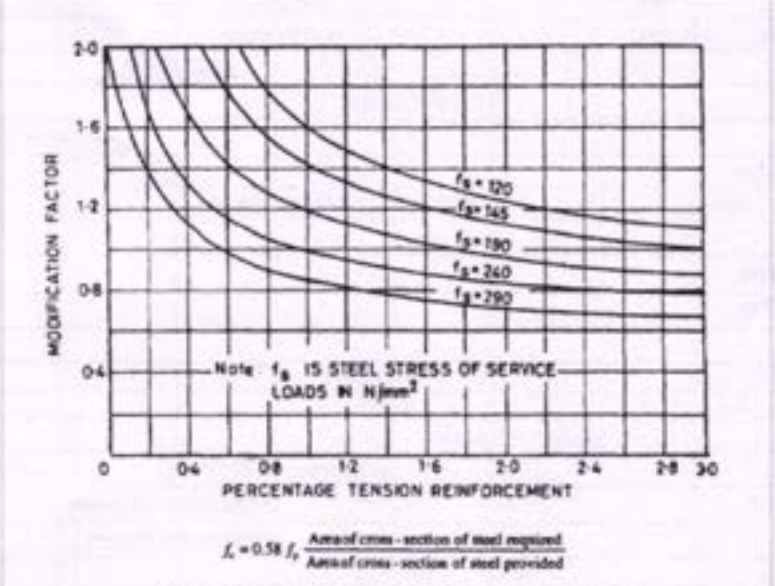


FIG. 4 MODIFICATION FACTOR FOR TENSION REINFORCEMENT

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

Table 19 Design Shear Strength of Concrete, τ_c, N/mm²

(Clauses 40.2.1, 40.2.2, 40.3, 40.4, 40.5.3, 41.3.2, 41.3.3 and 41.4.3)

$\frac{100A_s}{bd}$	Concrete Grade					
	M 15	M 20	M 25	M 30	M 35	M 40 and above
(1)	(2)	(3)	(4)	(5)	(6)	(7)
≤ 0.15	0.28	0.28	0.29	0.29	0.29	0.30
0.25	0.35	0.36	0.36	0.37	0.37	0.38
0.50	0.46	0.48	0.49	0.50	0.50	0.51
0.75	0.54	0.56	0.57	0.59	0.59	0.60
1.00	0.60	0.62	0.64	0.66	0.67	0.68
1.25	0.64	0.67	0.70	0.71	0.73	0.74
1.50	0.68	0.72	0.74	0.76	0.78	0.79
1.75	0.71	0.75	0.78	0.80	0.82	0.84
2.00	0.71	0.79	0.82	0.84	0.86	0.88
2.25	0.71	0.81	0.85	0.88	0.90	0.92
2.50	0.71	0.82	0.88	0.91	0.93	0.95
2.75	0.71	0.82	0.90	0.94	0.96	0.98
3.00 and above	0.71	0.82	0.92	0.96	0.99	1.01

NOTE — The term A_s is the area of longitudinal tension reinforcement which continues at least one effective depth beyond the section being considered except at support where the full area of tension reinforcement may be used provided the detailing conforms to 26.2.2 and 26.2.3

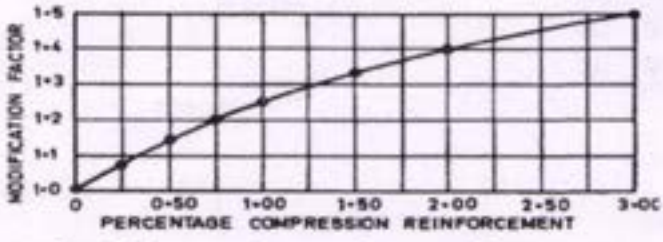


FIG. 5 MODIFICATION FACTOR FOR COMPRESSION REINFORCEMENT

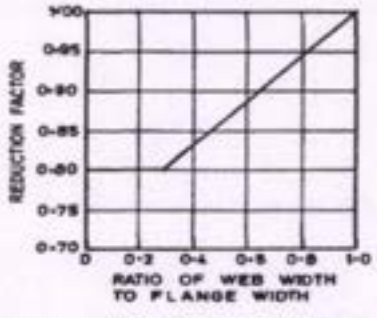


FIG. 6 REDUCTION FACTORS FOR RATIOS OF SPAN TO EFFECTIVE DEPTH FOR FLANGED BEAMS

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

480
500
f_{ck}
25

TABLE 3 FLEXURE — REINFORCEMENT PERCENTAGE, p_t FOR SINGLY REINFORCED SECTIONS

f_{ck} = 25 N/mm²

M_u/bd^2, N/mm²	f_y, N/mm²					M_u/bd^2, N/mm²	f_y, N/mm²				
	240	250	415	480	500		240	250	415	480	500
0·38	0·166	0·160	0·084	0·073	0·070	2·55	1·415	1·358	0·818	0·708	0·679
0·39	0·171	0·164	0·099	0·085	0·082	2·60	1·448	1·390	0·837	0·724	0·695
0·40	0·193	0·188	0·113	0·098	0·094	2·65	1·482	1·422	0·855	0·741	0·711
0·45	0·220	0·211	0·127	0·110	0·106	2·70	1·515	1·455	0·876	0·758	0·727
0·50	0·245	0·236	0·142	0·123	0·118	2·75	1·549	1·487	0·896	0·775	0·744
0·55	0·271	0·260	0·156	0·135	0·130	2·80	1·584	1·520	0·916	0·792	0·760
0·60	0·296	0·284	0·171	0·148	0·142	2·85	1·618	1·554	0·936	0·809	0·777
0·65	0·321	0·309	0·186	0·161	0·154	2·90	1·653	1·587	0·956	0·827	0·794
0·70	0·347	0·333	0·201	0·174	0·167	2·95	1·689	1·621	0·977	0·844	0·811
0·75	0·372	0·358	0·216	0·186	0·179	3·00	1·724	1·655	0·997	0·862	0·828
0·80	0·399	0·383	0·231	0·199	0·191	3·05	1·760	1·690	1·018	0·880	0·845
0·85	0·425	0·408	0·246	0·212	0·204	3·10	1·797	1·725	1·039	0·898	0·863
0·90	0·451	0·433	0·261	0·225	0·216	3·15	1·834	1·760	1·061	0·917	0·880
0·95	0·477	0·458	0·276	0·239	0·229	3·20	1·871	1·796	1·082	0·936	0·898
1·00	0·504	0·483	0·291	0·253	0·242	3·25	1·909	1·832	1·104	0·954	0·916
1·05	0·530	0·509	0·307	0·265	0·255	3·30	1·947	1·869	1·126	0·973	0·935
1·10	0·557	0·535	0·322	0·279	0·267	3·35	1·985	1·904	1·147	0·993	0·954
1·15	0·584	0·561	0·338	0·293	0·280	3·40	2·024	1·944	1·171	0·989	
1·20	0·611	0·587	0·353	0·306	0·293	3·45	2·063	1·984	1·193		
1·25	0·638	0·613	0·369	0·319	0·306	3·50	2·103	2·024	1·216		
1·30	0·666	0·639	0·385	0·333	0·320	3·55	2·143	2·064	1·239		
1·35	0·693	0·666	0·401	0·347	0·333	3·60	2·183	2·104	1·262		
1·40	0·721	0·693	0·417	0·360	0·346	3·65	2·224	2·145	1·286		
1·45	0·749	0·719	0·433	0·374	0·359	3·70	2·265	2·186	1·309		
1·50	0·777	0·746	0·449	0·388	0·373	3·75	2·307	2·227	1·333		
1·55	0·805	0·773	0·466	0·403	0·387	3·80	2·349	2·269	2·020		
1·60	0·834	0·800	0·482	0·417	0·400	3·85	2·391	2·310	2·036		
1·65	0·862	0·828	0·499	0·431	0·414	3·90	2·434	2·352	2·051		
1·70	0·891	0·856	0·515	0·445	0·428	3·95	2·477	2·394	2·067		
1·75	0·920	0·885	0·532	0·460	0·442	3·98	2·503	2·420	2·083		
1·80	0·949	0·911	0·549	0·473	0·456	3·92	2·395	2·099			
1·85	0·979	0·940	0·566	0·489	0·470	3·92	2·201	2·113			
1·90	1·009	0·968	0·583	0·504	0·484	3·94	2·219	2·133			
1·95	1·038	0·997	0·601	0·519	0·498	3·96	2·236	2·147			
2·00	1·068	1·026	0·618	0·534	0·513	3·98	2·253	2·163			
2·05	1·099	1·055	0·635	0·549	0·527	3·70	2·270	2·178			
2·10	1·129	1·084	0·653	0·565	0·542	3·72	2·287	2·096			
2·15	1·160	1·114	0·671	0·580	0·557	3·74	2·304				
2·20	1·191	1·143	0·689	0·596	0·572						
2·25	1·222	1·173	0·707	0·611	0·587						
2·30	1·254	1·204	0·725	0·627	0·602						
2·35	1·285	1·234	0·743	0·643	0·617						
2·40	1·317	1·265	0·762	0·659	0·632						
2·45	1·350	1·296	0·781	0·675	0·648						
2·50	1·382	1·327	0·799	0·691	0·663						

NOTE — Blanks indicate inadmissible reinforcement percentage (see Table 61).

40.2.1.1 For solid slabs, the design shear strength for concrete shall be $\tau_c k$, where k has the values given below:

Overall Depth of Slab, mm	300 or more	275	250	225	200	175	150 or less
k	1.00	1.05	1.10	1.15	1.20	1.25	1.30

NOTE — This provision shall not apply to flat slabs for which 31.6 shall apply.

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

PROJECT: PROPOSED CLUB HOUSE AT COIMBATORE

DESIGN OF SLAB No: 1S

1.00	Grade of concrete			=	**35.00**	N/mm²
2.00	Grade of steel			=	**500.00**	N/mm²
3.00	Cover to reinforcement			=	**25.00**	mm
	Diameter of bar				**8.00**	mm
4.00	Aspect ratio $\frac{l_x}{l_y}$ =	**6.30**	6.42		1.800	< 2
		3.50	3.62			
5.00	Edge condition: **2 adjacent edges discontinuous**				Two way slab	
6.00	Modification factor assumed				**1.80**	
		87.46				
7.00	Depth required for deflection:			D =	**150.00**	mm
					150.00	mm
				d =	121.00	mm
8.00	Dead Load			=	3.60	kN/m²
9.00	Live load			=	**3.00**	kN/m²
10.00	Partitions & FF			=	**2.40**	kN/m²
11.00	Total load			=	9.00	kN/m²
12.00	Factored load			=	13.50	kN/m²

STEP 1	**Details**	**S- SPAN**			**L-SPAN**	
		(-ve) support(α_x)	(+ve) span(α_x)		(-ve) support(α_y)	(+ve) span (α_y)
	Co-efficent (IS:456, Table :26)	0.085	0.064		0.047	0.035
	M_u=Co-efficient*w* l_x^2	15.12	11.36		8.32	6.20
	K= Mu/bd2	1.03	0.78		0.57	0.42
	Percentage of steel required	0.25	0.18		0.13	0.10
	Ast required(in mm²)	297.67	221.72		161.13	119.39
	Ast min (in mm²)	180.00	180.00		180.00	180.00
	Ast to be provided (in mm2)	297.67	221.72		180.00	180.00
	Provided bars spacing (c/c)	168.93	226.80		279.37	279.37
	max spacing	250.00	250.00		250.00	250.00
	spacing	168.93	226.80		250.00	250.00
	Reqd bars spacing (c/c)	**160.00**	**220.00**		**250.00**	**250.00**
	Pvd bars spacing (c/c)	**150.00**	**150.00**		**200.00**	**200.00**
	Ast Provided(in mm²)	**335.24**	**335.24**		**251.43**	**251.43**
	Percentage of steel provided	**0.28**	**0.28**		**0.21**	**0.21**

STEPII	F_s=0.58 *f_y * (Ast required/ Ast provided)				
	F_s			191.80	
	M.F			**2.00**	
	if assumed modification factor is less than or equal to calculated the section is safe for deflection			safe	
	OVERALL DEPTH	**D**	**150.00**	**mm**	
	EFFECTIVE DEPTH	**d**	**121.00**	**mm**	

STEPIII	**Crack width calculation**			
	m	=	6.8	
	E_s	=	200000.0	
	Ec	=	29580.4	
	Pt	=	0.3	
	k	=	0.2	
	x	=	21.3	
	A_{st}	=	335.2	
	I_{cr}	=	25751606.21	
	M	=	11.4	
	f_{st}	=	297.6	
	ε_m	=	0.0	
	Spacing		150.0	
	a_{cr}	=	79.1	
	w_{cr}	=	0.14	
			<	
			0.20	mm (safe)





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.
/landlens/deal-room

FREE TOOLS · NO ACCOUNT NEEDED

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

Every free tool
/tools

Services we run for you
/services

The LandLens suite
/landlens/one

Verified RealEstate™

Every claim in this document traces back to a government record.

- 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.