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(1)

STRUCTURAL DESIGN CALCULATION REPORT FOR THE PROPOSED CONSTRUCTION OF RESIDENTIAL APARTMENT AND CLUB HOUSE (Non-High Rise),AT T.S.No: 5,6,7 IN THE LAYOUT "ROYAL WINDGATES PHASE-III",IN T.S.NO:1/1A,BLOCK:5 & WARD:AB,GOLDEN ROCK ZONE,K.ABISHEKAPURAM VILLAGE,TIRUCHIRAPPALLI CORPORATION.

06.02.2026	Design Basis Report	OK	KALARANI	PARIMALA	RAVICHANDRAN
DATE	**DESCRIPTION**	**STATUS**	**PREPARED BY**	**REVIEWED BY**	**APPRVD. BY**

STRUCTURAL CONSULTANT

ARCHITECTS PLUS

 # D-27, 2ND FLOOR, JP TOWER,
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CLIENT

M/s. ROYAL SHELTER

TIRUCHIRAPPALLI.

For ROYAL SHELTER

Managing Partner
Power Agent

P.RAVICHANDRAN,M.E.,A.I.I.A.,A.I.V.,
Regd. Architect / Structural Engineer
CA/98/23109 AM 77839/5
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STRUCTURAL DESIGN CALCULATION REPORT FOR THE PROPOSED CONSTRUCTION OF RESIDENTIAL APARTMENT AND CLUB HOUSE (Non-High Rise), AT PLOT NO.5, 6,7 IN THE LAYOUT "ROYAL WINDGATES PHASE-III", IN T.S.NO: 1/1A, BLOCK: 5 & WARD: AB, GOLDEN ROCK ZONE, K.ABISHEKAPURAM VILLAGE, TIRUCHIRAPPALLI CORPORATION.

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STRUCTURAL DESIGN CALCULATION REPORT FOR THE PROPOSED CONSTRUCTION OF RESIDENTIAL APARTMENT AND CLUB HOUSE (Non-High Rise), AT PLOT NO.5,6,7 IN THE LAYOUT "ROYAL WINDGATES PHASE-III", IN T.S.NO: 1/1A, BLOCK: 5 & WARD: AB, GOLDEN ROCK ZONE, K.ABISHEKAPURAM VILLAGE, TIRUCHIRAPPALLI CORPORATION.

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 Apartment in Plot No.5,6,7 in the Layout "ROYAL WINDGATES PHASE-III" in T.S.No: 1/1a, Block: 5 & Ward AB, Golden Rock Zone, K.Abhisekapuram village, Tiruchirappalli Corporation.

2.1. Agencies

Client: M/s. ROYAL SHELTER.

Architect: P. Ravichandran.

Structural Consultant: P. Ravichandran ,
Structural Engineer,
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Services Consultants:
Electrical: -
Plumbing: -
HVAC: -
Project Consultant: -
Landscape consultants: -

2.2. The Building

The proposed construction of a Residential development is situated at T.S.No: 1/1A, Block :5, Ward:AB, Golden Rock Zone, K.Abhisekapuram Village, Tiruchirappalli Corporation. It has only one Block consisting of Stilt floor +5 upper stories + Terrace. Stilt Floor accommodate car parks and Swimming pool , 1st floor accommodate Residential and Gym&Indoorgames, Meditation cum yofa hall, whereas the 2nd Floor to 5th Floor are designed to accommodate Residential units which are configured with 2 & 3BHK.

Architecturally, The Block 38.4m x 39.62m (125'10½"x130'0") is trapezoidal shape designed in line with shape of land parcel. the block is designed to accommodate 2BHK & 3BHK units. It has been designed adequately with lift, together with Staircase with a common lobby enables easy & smooth vertical transportation between the floors. The vertical access positioned close to the centre of the building which ensures easy circulation of occupants. Toilets are a designed with the conventional sunk of 125mm(5") with the floor buried trap concept and the balcony is designed with 2" sunk to accommodate the floor trap to drain the water. Terrace is designed as RCC roof with the loadings to cater the 75mm thickness of weathering course and equipment like A/C outdoor units, solar panel etc. Above Terrace, staircase head rooms and Over Head Tanks are provided.

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 assigned 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 300/230x375mm, 300/230x450mm, 300/230x525&300/230x600 and the Beam sizes of width 230mm and 300mm and depth varies from 300mm to 600mm etc .The slab thickness varies from 125mm to150mm.

2.3. Architectural/Structural Configuration

Table: Architectural Floor heights/Structural& Details:

BUILDING CONFIGURATION	
Building Dimension in Plan	38.4m x 39.62m (125'10½"x130'0")
No. Of Floors	**Stilt+5**
Stilt floor height	2.80m
1st Floor height to 5th Floor	3.07m each floor
Club house for stilt floor	3.10m
Club house for first floor	3.68m
Typical 2nd ,3rd and 4th floor	3.07m
LMR Slab	4.34m
Head Room Slab	2.45m
Grade of concrete for RC beams / RC slabs	M25
Non-Structural Grade Slab	M20

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
Non-Structural Grade Slab	M20
Grade of Steel	Fe500 / Fe550

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

3.2 Design 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

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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

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 M30 & M25 with minimum 28 day strength of 30 & 25 N/mm^2 respectively. Grade M30 concrete is used for design of Isolated Footings & vertical elements like RC columns whereas M25 grade is used for RC beam & RC Slab. Concrete Mix M10 has been used in filling, plum concrete, 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 400 kg/m^3 for M30 grade concrete and 325 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 not be less than 100 and it shall be in the range of 120 for pumbable concrete.

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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 IS 456: 2000.

4.1.5 Reinforcement

High yield strength deformed bars conforming to IS 1786-2008 with f_y = 500 N/ sq.mm has been 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 = 50mm
   On other face = 30mm

4.1.8 Development Length

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

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4.1.9 Soil Parameters

The Soil Investigation Report No. TIME/49/ SOIL TEST/ JUNE 2023 dated 23.06.2023 carried out by Time Institute for Materials Testing, Tiruchirappalli. Based on the soil report made available to us, there are two (2) 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 0.25m 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 hole 1 the top layer upto 0.25m is Clay. From 0.25m to 1.0m it is clay with sand mixed. From 1.0m to 1.5m is gravel and from 1.50m to 4.50m is Soft rock exist with « N » value 60. The Ground water table report is 4. 5m during the investigation period.

4.2 LoadingStandards

Table: Unit Weight of Materials:

Material	Floor Heights
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

4.2.1a Table: Gravity 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	
Stilt Floor	= (0.23x2.43x7) = 3.91kN/m
1st Floor to 5th Floor	= (0.23x2.43x7)=3.91kN/m
Head Room	= (0.23x2.40x7)= 3.86kN/m
For 115 mm thick wall	
Stilt Floor	= (0.115x2.58x7) = 2.08kN/m
1st Floor to 5th Floor	= (0.115x2.98x7) =2.40kN/m

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4.2.1 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 4.2.1.1 CarParks

LoadComponent	Thickness (mm)	Load	Units
Floor Finishes		1.5	kN/m2
LiveLoad		5.0	kN/m2

Table 4. 2.1.2 Rooms

LoadComponent	Thickness (mm)	Load	Units
Floor Finishes		1.5	kN/m2
LiveLoad		2.0	kN/m2

Table 4. 2.1.3 Toilets

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

Table 4. 2.1.4 Terrace

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

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Table 4. 2.1.5 Corridors, Passage, Lobbies, balcony

LoadComponent	Thickness (mm)	Load	Units
Finishes		1.5	kN/m2
LiveLoad		2.0	kN/m2

Table 4. 2.1.6 Staircases

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

4.2.2 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 modeling 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.





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 M30 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 single Stilt+5 Storey + Roof structure. 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. TIME/49/ SOIL TEST/ JUNE 2023 Isolated Footings are adopted for Foundation system.

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Based on the sub soil condition presented in the Soil Investigation Report No. TIME/49/ SOIL TEST/ JUNE 2023 dated 2306.2023 carried out by Time Institute for Materials Testing. Tiruchirappalli, Isolated Footings are adopted for Foundation system. As per the soil test report recommandation, isolated footing are designed as foundation system using the recommended SBC of 350 kN/m^2 at a depth of 1.8m below the NGL. The Footings are rest over the Hard strata 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 recommandations 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.**





11.1 Design of Foundation

Based on the sub soil condition presented in the Soil Investigation Report No. TIME/49/ SOIL TEST/ JUNE 2023 dated 2306.2023 carried out by Time Institute for Materials Testing, Tiruchirappalli, Isolated Footings are adopted for Foundation system. As per the soil test report recommandation, isolated footing are designed as foundation system using the recommended SBC of 350kN/m^2 at a depth of 3.0m below the NGL. The Footings are rest over the Hard strata with « N » value is 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.**

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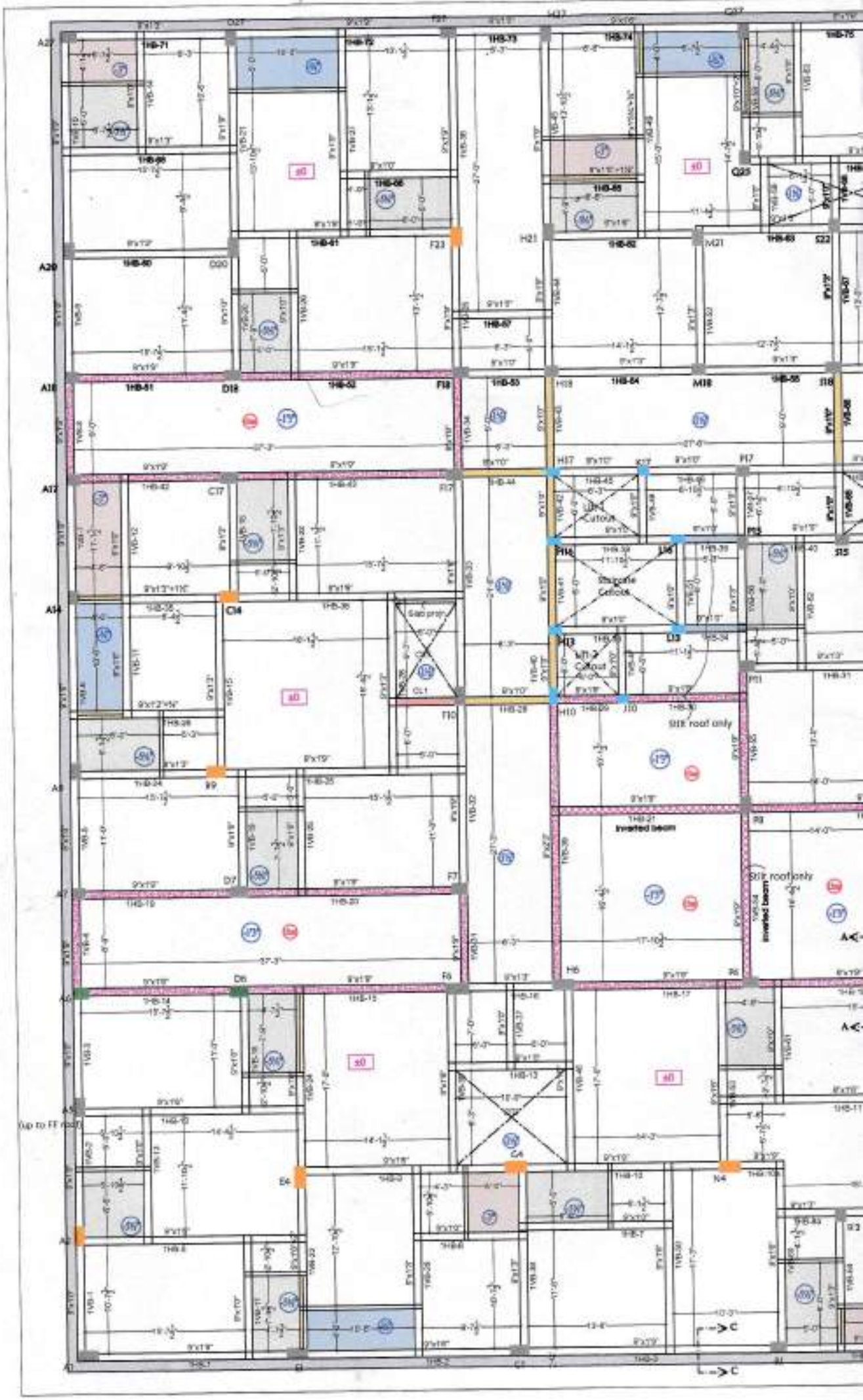
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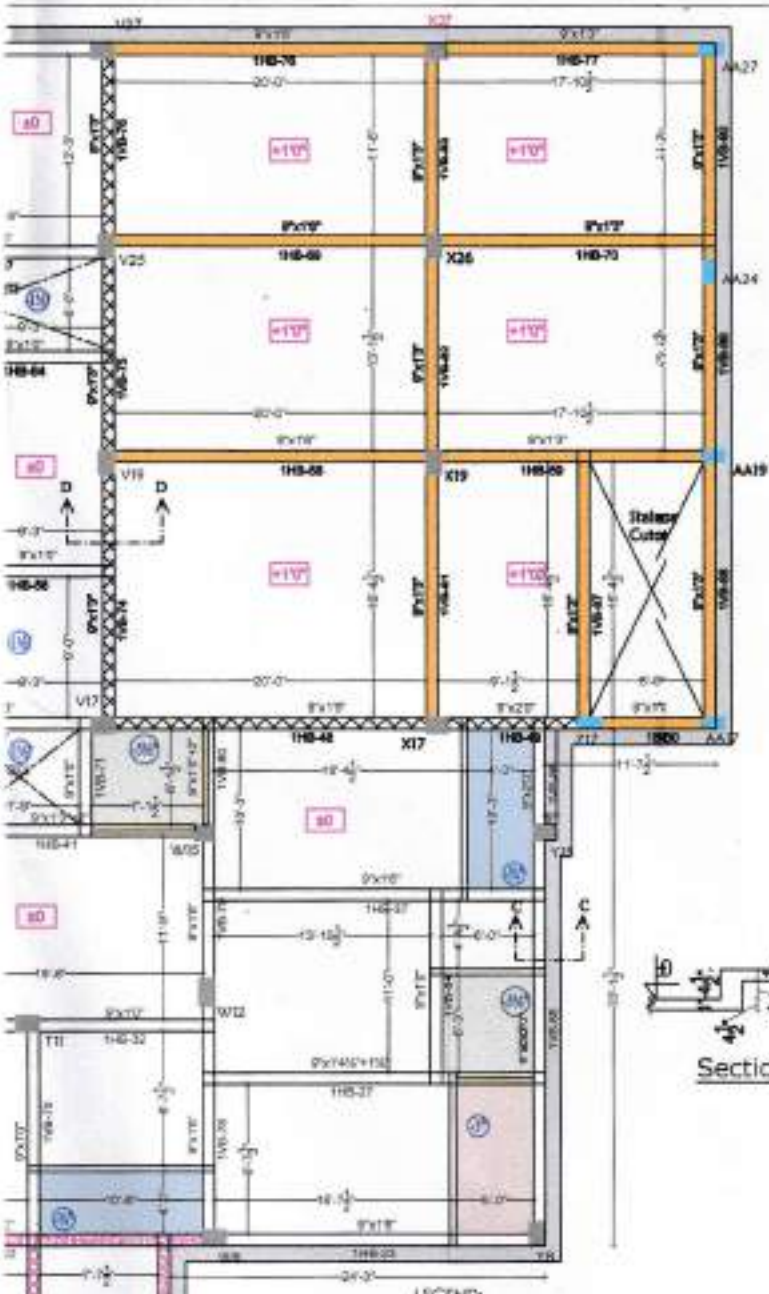
ANNEXURE-A

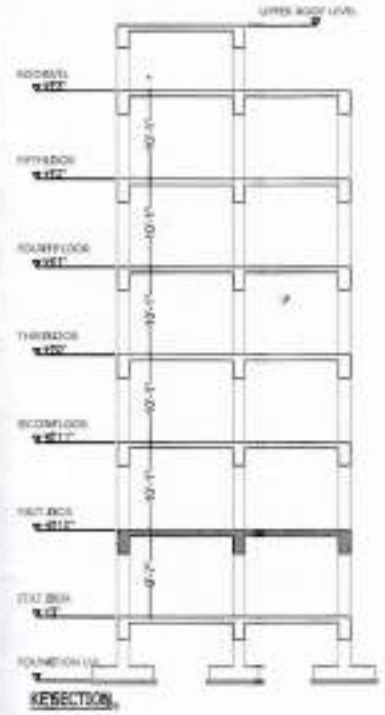
STRUCTURAL DRAWINGS

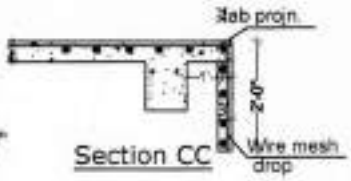
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Stairwell Cutout
Lift 2 Cutout
Slab proj.
Still roof only
Still roof only
inverted beam
(up to FF roof)

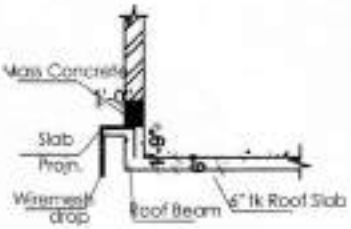




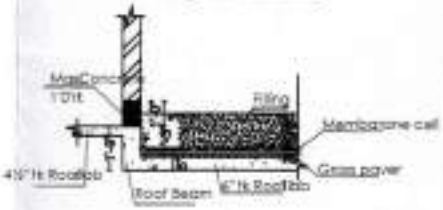


Section CC

Section DD



SectionBB



Section AA

LEGEND:

- Toilet Low roof sunken -5½"
- Beam sunken 2"
- Balcony sunken 6"
- Service Low roof sunken -1½"
- Slab Projection
- 1'0" ht mass concrete
- +1'0" lvl beam

Notes:

1. Only written dimensions are to be followed.
2. Steel to be used : Fe 500
3. Concrete to be used : M-30 for Columns
   M-25 for Beams
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) Stilt + 5 floors
7. Road Lvl is taken as ±0
8. Stilt floor lvl is +1'3"
9. Stilt floor roof slab top level is +10'0" except sunken area.
10. Roof height 9'7"

PROJECT
"ROYAL WINDGATES"
PH-III

TITLE
Stilt floor Roof Framingplan

N

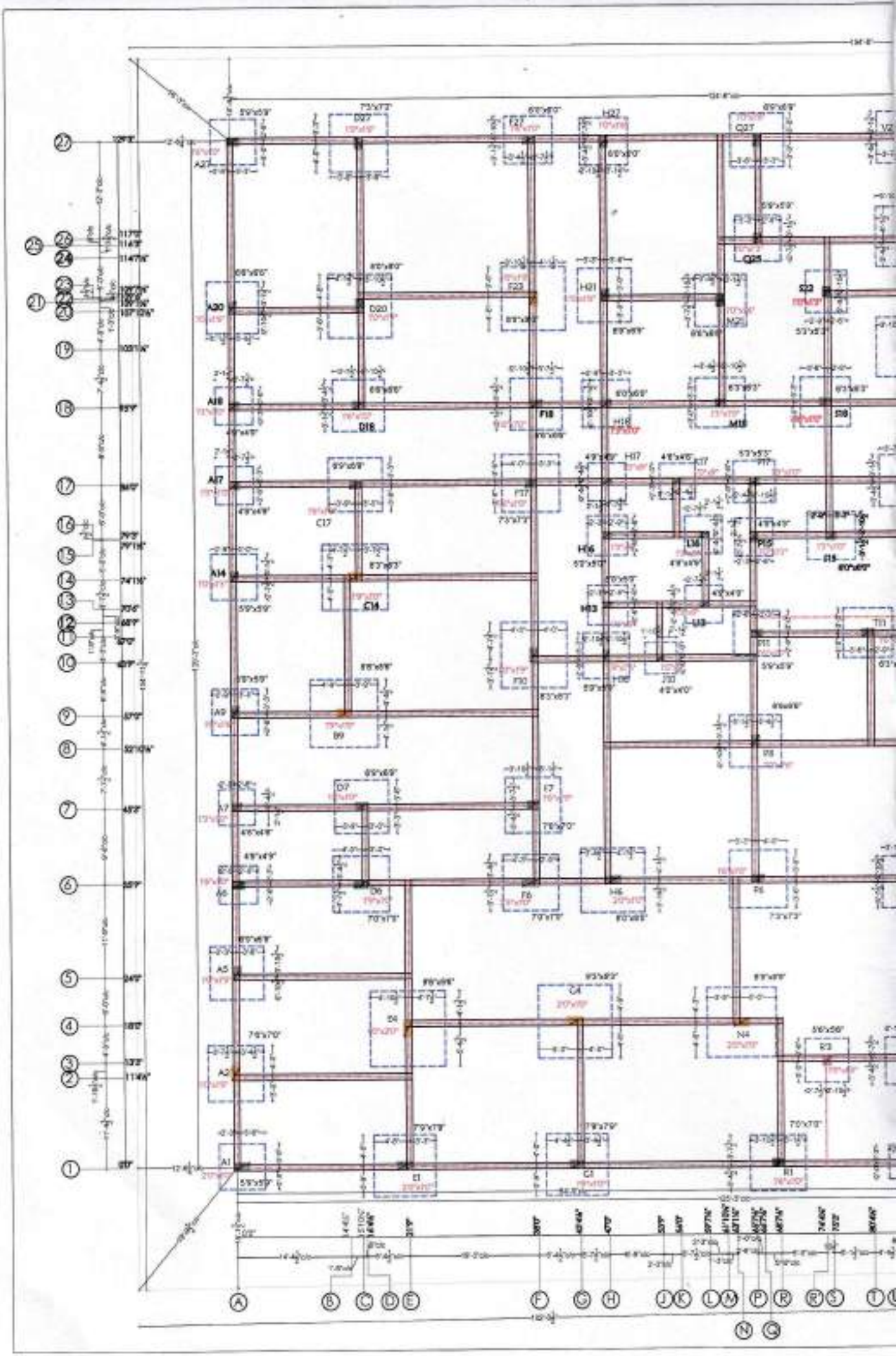
ARCHITECT
P. Rajchandran.
M.E.A.I.I.A., A.I.V.

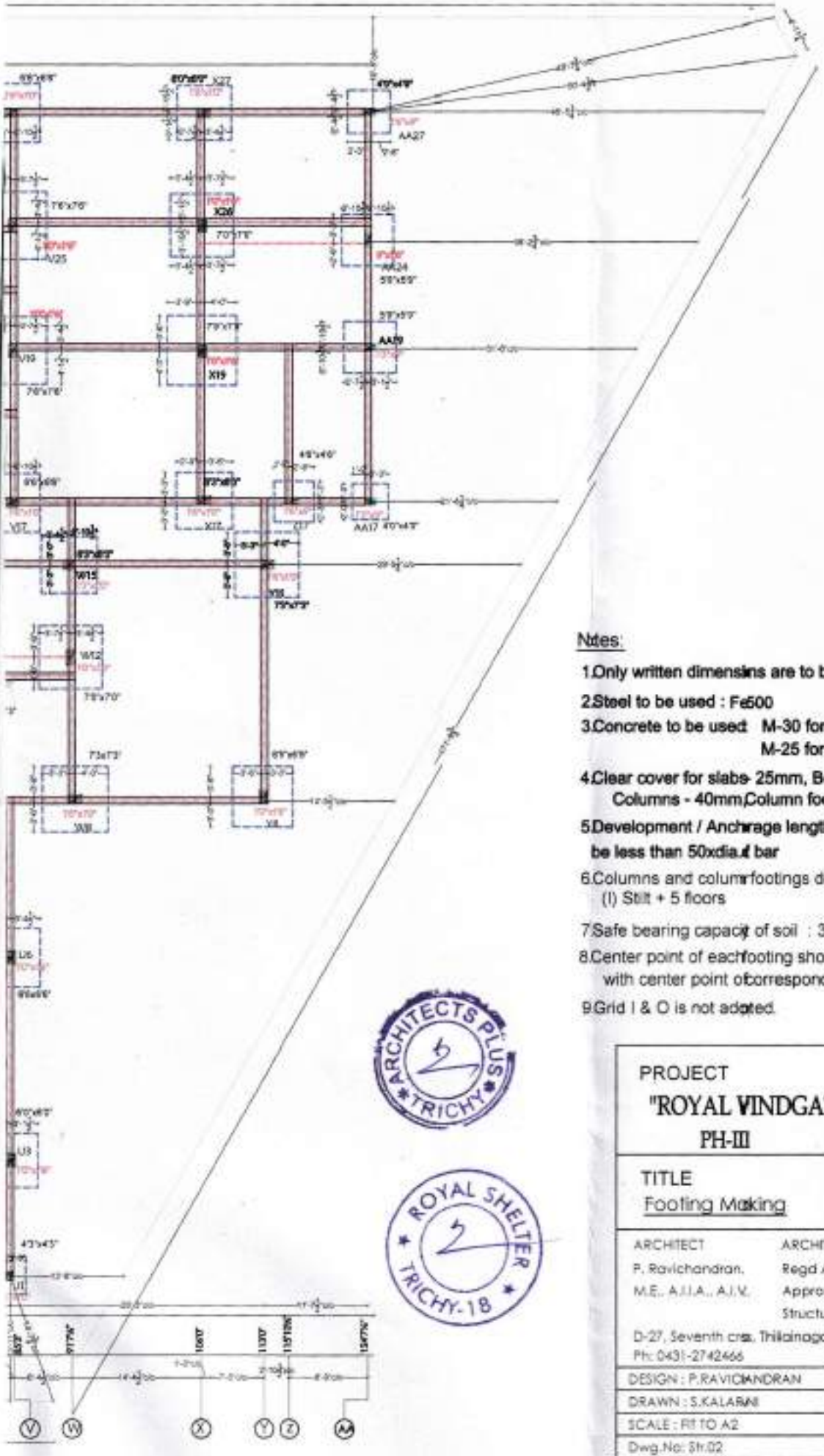
ARCHITECTS PLUS
Regd Architects
Approved valuers
StructuralConsultants
D-27Seventh cross, Thillainagar,Trichy - 18.
Ph: 0431-2742466

DESIGN : P.RAVICHANDRAN
DRAWN : S.KALARANI
SCALE FIT TO A2
Dwg.No: Str.07
DATE : 21.01.2026









Ntes:

1.Only written dimensins are to be followed

2.Steel to be used : Fe500

3.Concrete to be used: M-30 for Columns
M-25 for Beams

4.Clear cover for slabs- 25mm, Beams - 30mm,
Columns - 40mm,Column footings - 60mm.

5.Development / Anchrage length shall not be less than 50xdia.of bar

6.Columns and columnfootings designed fo
(I) Stilt + 5 floors

7.Safe bearing capacity of soil : 350KN/m²

8.Center point of eachfooting should coinsi
with center point ofcorresponding colum

9.Grid I & O is not adopted.

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

PROJECT

"ROYAL WINDGATES"

PH-III

TITLE

Footing Making

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

ARCHITECTS PLUS
Regd Architects
Approved valuers
Structural Consultants.

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

DESIGN : P.RAVICHANDRAN

DRAWN : S.KALARANI

SCALE : Fit TO A2

Dwg.No: Str.02

DATE : 14.08.2025/20.09.2025/30.09.2025/2.10.2025

STRUCTURAL DESIGN CALCULATION REPORT FOR THE PROPOSED CONSTRUCTION OF RESIDENTIAL APARTMENT AND CLUB HOUSE (Non-High Rise), AT PLOT NO.5, 6,7 IN THE LAYOUT "ROYAL WINDGATES PHASE-III", IN T.S.NO: 1/1A, BLOCK: 5 & WARD: AB, GOLDEN ROCK ZONE, K.ABISHEKAPURAM VILLAGE, TIRUCHIRAPPALLI CORPORATION.

ANNEXURE-B

STAAD.Pro SUMMARY REPORT & MODEL PLOTS

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

Job Title: Royal Windgaes Phase- III

Client: Royal Shelter

Engineer: P.Ravichandran

```
STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 29-May-25
JOB NAME Royal Windgaes Phase- III
JOB CLIENT Royal Shelter
ENGINEER NAME P.Ravichandran
END JOB INFORMATION
INPUT WIDTH 79
UNIT METER KN
JOINT COORDINATES
2 0 0 0; 4 6.58 0 0; 6 13.19 0 0; 8 20.8 0 0; 10 25.79 0 0; 11 0 0 -3.47;
21 25.79 0 -4.03; 22 6.58 0 -5.48; 25 13.19 0 -5.48; 29 19.48 0 -5.48;
31 0 0 -7.31; 41 0 0 -10.9; 42 4.98 0 -10.9; 45 11.56 0 -10.9;
48 14.29 0 -10.9; 50 19.97 0 -10.9; 52 25.79 0 -10.9; 53 0 0 -13.8;
54 4.98 0 -13.8; 56 19.97 0 -16.12; 58 27.88 0 -16.12; 59 34.38 0 -16.12;
60 0 0 -17.38; 61 4.37 0 -17.38; 72 11.56 0 -19.43; 73 14.29 0 -19.43;
74 16.34 0 -19.43; 75 19.97 0 -20.42; 79 27.88 0 -20.99; 81 14.29 0 -21.49;
83 18.14 0 -21.49; 84 0 0 -22.59; 87 4.83 0 -22.59; 94 14.29 0 -24.16;
96 18.14 0 -24.16; 97 19.97 0 -24.16; 99 22.9 0 -24.16; 101 27.88 0 -24.16;
102 0 0 -26.22; 104 4.83 0 -26.22; 106 11.56 0 -26.22; 107 14.29 0 -26.22;
108 17.03 0 -26.22; 109 19.97 0 -26.22; 112 25.94 0 -26.22; 117 37.96 0 -26.22;
118 0 0 -29.19; 119 4.98 0 -29.19; 121 11.56 0 -29.19; 122 14.29 0 -29.19;
123 18.83 0 -29.19; 124 22.9 0 -29.19; 130 25.94 0 -31.44; 131 32.24 0 -31.44;
133 37.96 0 -31.44; 134 0 0 -32.89; 135 4.98 0 -32.89; 139 11.56 0 -33.39;
140 14.29 0 -33.39; 142 18.83 0 -33.39; 145 22.9 0 -33.39; 150 20.27 0 -35.45;
153 25.94 0 -35.45; 158 0 0 -39.41; 160 4.98 0 -39.41; 162 11.56 0 -39.41;
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169 37.96 0 -39.41; 170 0 -1 0; 171 6.58 -1 0; 172 13.19 -1 0; 173 20.8 -1 0;
174 25.79 -1 0; 175 0 -1 -3.47; 176 25.79 -1 -4.03; 177 6.58 -1 -5.48;
178 13.19 -1 -5.48; 179 19.48 -1 -5.48; 180 0 -1 -7.31; 181 0 -1 -10.9;
182 4.98 -1 -10.9; 183 11.56 -1 -10.9; 184 14.29 -1 -10.9; 185 19.97 -1 -10.9;
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190 27.88 -1 -16.12; 191 34.38 -1 -16.12; 192 0 -1 -17.38; 193 4.37 -1 -17.38;
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250 0 3.05 -3.47; 251 25.79 3.05 -4.03; 252 6.58 3.05 -5.48;
253 13.19 3.05 -5.48; 255 0 3.05 -7.31; 256 0 3.05 -10.9; 257 4.98 3.05 -10.9;
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ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

```
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279 14.29 3.05 -24.16; 280 18.14 3.05 -24.16; 281 19.97 3.05 -24.16;
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286 11.56 3.05 -26.22; 287 14.29 3.05 -26.22; 288 17.03 3.05 -26.22;
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305 11.56 3.05 -33.39; 306 14.29 3.05 -33.39; 307 18.83 3.05 -33.39;
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323 20.8 6.1 0; 324 25.79 6.1 0; 325 0 6.1 -3.47; 326 25.79 6.1 -4.03;
327 6.58 6.1 -5.48; 328 13.19 6.1 -5.48; 330 0 6.1 -7.31; 331 0 6.1 -10.9;
332 4.98 6.1 -10.9; 333 11.56 6.1 -10.9; 334 14.29 6.1 -10.9;
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434 0 9.15 -26.22; 435 4.83 9.15 -26.22; 436 11.56 9.15 -26.22;
437 14.29 9.15 -26.22; 438 17.03 9.15 -26.22; 439 19.97 9.15 -26.22;
444 0 9.15 -29.19; 445 4.98 9.15 -29.19; 446 11.56 9.15 -29.19;
```

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

Job Title: Royal Windgaes Phase- III

Client: Royal Shelter

Engineer: P.Ravichandran

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483 11.56 12.2 -10.9; 485 19.97 12.2 -10.9; 486 25.79 12.2 -10.9;
487 0 12.2 -13.8; 488 4.98 12.2 -13.8; 489 19.97 12.2 -16.12;
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493 4.37 12.2 -17.38; 494 11.56 12.2 -19.43; 495 14.29 12.2 -19.43;
496 16.34 12.2 -19.43; 497 19.97 12.2 -20.42; 498 27.88 12.2 -20.99;
499 14.29 12.2 -21.49; 500 18.14 12.2 -21.49; 501 0 12.2 -22.59;
502 4.83 12.2 -22.59; 503 11.56 12.2 -22.59; 504 14.29 12.2 -24.16;
505 18.14 12.2 -24.16; 506 19.97 12.2 -24.16; 507 22.9 12.2 -24.16;
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521 11.56 12.2 -29.19; 522 14.29 12.2 -29.19; 523 18.83 12.2 -29.19;
524 22.9 12.2 -29.19; 528 0 12.2 -32.89; 529 4.98 12.2 -32.89;
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538 4.98 12.2 -39.41; 539 11.56 12.2 -39.41; 540 14.29 12.2 -39.41;
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552 6.58 15.25 -5.48; 553 13.19 15.25 -5.48; 555 0 15.25 -7.31;
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620 0 18.3 0; 621 6.58 18.3 0; 622 13.19 18.3 0; 623 20.8 18.3 0;
625 0 18.3 -3.47; 627 6.58 18.3 -5.48; 628 13.19 18.3 -5.48; 630 0 18.3 -7.31;
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639 19.97 18.3 -16.12; 640 27.88 18.3 -16.12; 642 0 18.3 -17.38;
643 4.37 18.3 -17.38; 644 11.56 18.3 -19.43; 645 14.29 18.3 -19.43;

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

646 16.34 18.3 -19.43; 647 19.97 18.3 -20.42; 648 27.88 18.3 -20.99;
649 14.29 18.3 -21.49; 650 18.14 18.3 -21.49; 651 0 18.3 -22.59;
652 4.83 18.3 -22.59; 653 11.56 18.3 -22.59; 654 14.29 18.3 -24.16;
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661 11.56 18.3 -26.22; 662 14.29 18.3 -26.22; 663 17.03 18.3 -26.22;
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670 4.98 18.3 -29.19; 671 11.56 18.3 -29.19; 672 14.29 18.3 -29.19;
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703 13.19 3.05 -3.58; 704 13.19 3.05 -3.73; 705 17.53 3.05 -3.73;
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710 14.29 3.05 -5.48; 711 17.53 3.05 -5.48; 713 20.8 3.05 -5.48;
714 1.9 3.05 -7.31; 715 4.98 3.05 -7.31; 716 6.58 3.05 -7.31;
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724 11.14 3.05 -10.9; 725 12.89 3.05 -10.9; 728 20.8 3.05 -10.9;
729 11.56 3.05 -13.8; 730 24.46 3.05 -16.12; 731 4.98 3.05 -17.38;
732 9.51 3.05 -17.38; 733 11.56 3.05 -17.38; 734 0 3.05 -19.17;
735 1.6 3.05 -19.17; 736 4.37 3.05 -19.17; 737 27.88 3.05 -19.17;
738 32.24 3.05 -19.17; 739 34.38 3.05 -19.17; 741 21.72 3.05 -20.42;
742 24.46 3.05 -20.42; 743 27.88 3.05 -20.42; 745 16.34 3.05 -21.49;
746 1.6 3.05 -22.59; 747 4.37 3.05 -22.59; 748 6.58 3.05 -22.59;
749 9.51 3.05 -22.59; 750 27.88 3.05 -22.86; 751 32.24 3.05 -22.86;
752 34.38 3.05 -22.86; 753 17.03 3.05 -24.16; 754 21.72 3.05 -24.16;
755 25.49 3.05 -24.16; 756 1.6 3.05 -26.22; 757 6.58 3.05 -26.22;
758 22.9 3.05 -26.22; 759 25.49 3.05 -26.22; 762 6.73 3.05 -29.19;
766 11.56 3.05 -30.94; 767 14.29 3.05 -30.94; 768 35.29 3.05 -31.44;
769 4.98 3.05 -33.39; 770 6.73 3.05 -33.39; 771 8.25 3.05 -33.39;
772 17.11 3.05 -33.39; 773 20.8 3.05 -33.39; 775 8.25 3.05 -34.99;
776 11.56 3.05 -34.99; 777 14.29 3.05 -34.95; 778 17.11 3.05 -34.95;
779 20.8 3.05 -35.45; 780 21.83 3.05 -35.45; 781 0 3.05 -35.98;
782 2.24 3.05 -35.98; 783 4.98 3.05 -35.98; 784 2.24 3.05 -39.41;
785 8.25 3.05 -39.41; 786 17.11 3.05 -39.41; 787 21.83 3.05 -39.41;
809 6.58 6.1 -7.31; 847 21.72 6.1 -24.16; 848 25.49 6.1 -24.16;
852 25.49 6.1 -26.22; 1255 34.38 -1 -24.16; 1256 37.96 0 -34.95;
1258 37.96 -1 -34.95; 1268 22.9 6.1 -33.39; 1270 28 6.1 -33.39;
1271 28 6.1 -35.45; 1272 28 6.1 -39.41; 1273 28 6.1 -31.44;
1284 29.52 6.1 -31.44; 1286 34.05 6.1 -31.44; 1293 32.24 6.1 -34.95;
1296 33.99 6.1 -39.41; 1297 33.99 6.1 -34.95; 1300 29.52 6.1 -29.65;
1301 34.05 6.1 -29.65; 1303 37.96 6.1 -27.97; 1304 34.05 6.1 -27.97;
1305 34.05 6.1 -28.2; 1306 29.52 6.1 -28.2; 1307 39.16 6.1 -34.95;
1308 39.16 6.1 -31.44; 1310 39.16 6.1 -39.41; 1404 26.99 3.05 -4.03;
1406 26.99 3.05 -7.42; 1407 6.5 3.05 -13.8; 1408 6.5 3.05 -17.38;

Job Title: Royal Windgaes Phase- III

Client: Royal Shelter

Engineer: P.Ravichandran

1410 19.97 3.05 -21.49; 1412 19.97 3.05 -19.43; 1413 26.99 3.05 -10.9;
1414 26.99 3.05 -16.12; 1419 37.96 3.05 -35.45; 1447 34.38 3.05 -26.22;
1458 25.94 6.1 -33.39; 1460 29.52 6.1 -26.22; 1461 34.05 6.1 -26.22;
1964 14.29 0 -15.165; 1966 14.29 -1 -15.165; 1967 23.925 0 -16.12;
1969 32.24 -1 -26.22; 1970 23.925 -1 -16.12; 1972 34.38 0 -21.17;
1974 34.38 -1 -21.17; 1976 4.98 6.1 0; 1977 10.04 6.1 0; 1978 17.53 6.1 0;
1979 22.63 6.1 0; 1980 1.9 6.1 -3.47; 1981 4.98 6.1 -3.47; 1982 6.58 6.1 -3.47;
1983 10.04 6.1 -3.58; 1984 13.19 6.1 -3.58; 1985 13.19 6.1 -3.73;
1986 17.53 6.1 -3.73; 1987 20.8 6.1 -4.03; 1989 10.04 6.1 -5.48;
1990 11.14 6.1 -5.48; 1991 14.29 6.1 -5.48; 1992 17.53 6.1 -5.48;
1994 20.8 6.1 -5.48; 1995 1.9 6.1 -7.31; 1996 4.98 6.1 -7.31;
1997 20.8 6.1 -7.42; 1998 25.79 6.1 -7.42; 1999 11.14 6.1 -8.52;
2000 12.89 6.1 -8.52; 2001 14.29 6.1 -8.52; 2002 6.58 6.1 -10.9;
2003 11.14 6.1 -10.9; 2004 12.89 6.1 -10.9; 2006 20.8 6.1 -10.9;
2007 11.56 6.1 -13.8; 2008 24.46 6.1 -16.12; 2009 4.98 6.1 -17.38;
2010 9.51 6.1 -17.38; 2011 11.56 6.1 -17.38; 2012 0 6.1 -19.17;
2013 1.6 6.1 -19.17; 2014 4.37 6.1 -19.17; 2015 27.88 6.1 -19.17;
2016 32.24 6.1 -19.17; 2017 34.38 6.1 -19.17; 2019 21.72 6.1 -20.42;
2020 24.46 6.1 -20.42; 2021 27.88 6.1 -20.42; 2022 16.34 6.1 -21.49;
2023 1.6 6.1 -22.59; 2024 4.37 6.1 -22.59; 2025 6.58 6.1 -22.59;
2026 9.51 6.1 -22.59; 2027 27.88 6.1 -22.86; 2028 32.24 6.1 -22.86;
2029 34.38 6.1 -22.86; 2030 17.03 6.1 -24.16; 2031 1.6 6.1 -26.22;
2032 6.58 6.1 -26.22; 2033 22.9 6.1 -26.22; 2034 6.73 6.1 -29.19;
2035 11.56 6.1 -30.94; 2036 14.29 6.1 -30.94; 2037 4.98 6.1 -33.39;
2038 6.73 6.1 -33.39; 2039 8.25 6.1 -33.39; 2040 17.11 6.1 -33.39;
2042 8.25 6.1 -34.99; 2043 11.56 6.1 -34.99; 2044 14.29 6.1 -34.95;
2045 17.11 6.1 -34.95; 2047 21.83 6.1 -35.45; 2048 0 6.1 -35.98;
2049 2.24 6.1 -35.98; 2050 4.98 6.1 -35.98; 2051 2.24 6.1 -39.41;
2052 8.25 6.1 -39.41; 2053 17.11 6.1 -39.41; 2054 21.83 6.1 -39.41;
2055 26.99 6.1 -4.03; 2056 26.99 6.1 -7.42; 2057 6.5 6.1 -13.8;
2058 6.5 6.1 -17.38; 2061 26.99 6.1 -10.9; 2066 6.58 9.15 -7.31;
2067 21.72 9.15 -24.16; 2068 25.49 9.15 -24.16; 2069 25.49 9.15 -26.22;
2073 28 9.15 -33.39; 2074 28 9.15 -35.45; 2075 28 9.15 -39.41;
2076 28 9.15 -31.44; 2078 29.52 9.15 -31.44; 2080 34.05 9.15 -31.44;
2081 32.24 9.15 -34.95; 2082 33.99 9.15 -39.41; 2083 33.99 9.15 -34.95;
2084 29.52 9.15 -29.65; 2085 34.05 9.15 -29.65; 2086 37.96 9.15 -27.97;
2087 34.05 9.15 -27.97; 2088 34.05 9.15 -28.2; 2089 29.52 9.15 -28.2;
2090 39.16 9.15 -34.95; 2091 39.16 9.15 -31.44; 2093 39.16 9.15 -39.41;
2095 25.94 9.15 -33.39; 2096 29.52 9.15 -26.22; 2097 34.05 9.15 -26.22;
2099 4.98 9.15 0; 2100 10.04 9.15 0; 2101 17.53 9.15 0; 2102 22.63 9.15 0;
2103 1.9 9.15 -3.47; 2104 4.98 9.15 -3.47; 2105 6.58 9.15 -3.47;
2106 10.04 9.15 -3.58; 2107 13.19 9.15 -3.58; 2108 13.19 9.15 -3.73;
2109 17.53 9.15 -3.73; 2110 20.8 9.15 -4.03; 2112 10.04 9.15 -5.48;
2113 11.14 9.15 -5.48; 2114 14.29 9.15 -5.48; 2115 17.53 9.15 -5.48;
2117 20.8 9.15 -5.48; 2118 1.9 9.15 -7.31; 2119 4.98 9.15 -7.31;
2120 20.8 9.15 -7.42; 2121 25.79 9.15 -7.42; 2122 11.14 9.15 -8.52;
2123 12.89 9.15 -8.52; 2124 14.29 9.15 -8.52; 2125 6.58 9.15 -10.9;
2126 11.14 9.15 -10.9; 2127 12.89 9.15 -10.9; 2129 20.8 9.15 -10.9;
2130 11.56 9.15 -13.8; 2131 24.46 9.15 -16.12; 2132 4.98 9.15 -17.38;
2133 9.51 9.15 -17.38; 2134 11.56 9.15 -17.38; 2135 0 9.15 -19.17;

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

```
2136 1.6 9.15 -19.17; 2137 4.37 9.15 -19.17; 2138 27.88 9.15 -19.17;
2139 32.24 9.15 -19.17; 2140 34.38 9.15 -19.17; 2142 21.72 9.15 -20.42;
2143 24.46 9.15 -20.42; 2144 27.88 9.15 -20.42; 2145 16.34 9.15 -21.49;
2146 1.6 9.15 -22.59; 2147 4.37 9.15 -22.59; 2148 6.58 9.15 -22.59;
2149 9.51 9.15 -22.59; 2150 27.88 9.15 -22.86; 2151 32.24 9.15 -22.86;
2152 34.38 9.15 -22.86; 2153 17.03 9.15 -24.16; 2154 1.6 9.15 -26.22;
2155 6.58 9.15 -26.22; 2156 22.9 9.15 -26.22; 2157 6.73 9.15 -29.19;
2158 11.56 9.15 -30.94; 2159 14.29 9.15 -30.94; 2160 4.98 9.15 -33.39;
2161 6.73 9.15 -33.39; 2162 8.25 9.15 -33.39; 2163 17.11 9.15 -33.39;
2165 8.25 9.15 -34.99; 2166 11.56 9.15 -34.99; 2167 14.29 9.15 -34.95;
2168 17.11 9.15 -34.95; 2170 21.83 9.15 -35.45; 2171 0 9.15 -35.98;
2172 2.24 9.15 -35.98; 2173 4.98 9.15 -35.98; 2174 2.24 9.15 -39.41;
2175 8.25 9.15 -39.41; 2176 17.11 9.15 -39.41; 2177 21.83 9.15 -39.41;
2178 26.99 9.15 -4.03; 2179 26.99 9.15 -7.42; 2180 6.5 9.15 -13.8;
2181 6.5 9.15 -17.38; 2184 26.99 9.15 -10.9; 2187 6.58 12.2 -7.31;
2188 21.72 12.2 -24.16; 2189 25.49 12.2 -24.16; 2190 25.49 12.2 -26.22;
2194 28 12.2 -33.39; 2195 28 12.2 -35.45; 2196 28 12.2 -39.41;
2197 28 12.2 -31.44; 2199 29.52 12.2 -31.44; 2201 34.05 12.2 -31.44;
2202 32.24 12.2 -34.95; 2203 33.99 12.2 -39.41; 2204 33.99 12.2 -34.95;
2205 29.52 12.2 -29.65; 2206 34.05 12.2 -29.65; 2207 37.96 12.2 -27.97;
2208 34.05 12.2 -27.97; 2209 34.05 12.2 -28.2; 2210 29.52 12.2 -28.2;
2211 39.16 12.2 -34.95; 2212 39.16 12.2 -31.44; 2214 39.16 12.2 -39.41;
2216 25.94 12.2 -33.39; 2217 29.52 12.2 -26.22; 2218 34.05 12.2 -26.22;
2219 14.29 12.2 -10.9; 2220 4.98 12.2 0; 2221 10.04 12.2 0; 2222 17.53 12.2 0;
2223 22.63 12.2 0; 2224 1.9 12.2 -3.47; 2225 4.98 12.2 -3.47;
2226 6.58 12.2 -3.47; 2227 10.04 12.2 -3.58; 2228 13.19 12.2 -3.58;
2229 13.19 12.2 -3.73; 2230 17.53 12.2 -3.73; 2231 20.8 12.2 -4.03;
2233 10.04 12.2 -5.48; 2234 11.14 12.2 -5.48; 2235 14.29 12.2 -5.48;
2236 17.53 12.2 -5.48; 2238 20.8 12.2 -5.48; 2239 1.9 12.2 -7.31;
2240 4.98 12.2 -7.31; 2241 20.8 12.2 -7.42; 2242 25.79 12.2 -7.42;
2243 11.14 12.2 -8.52; 2244 12.89 12.2 -8.52; 2245 14.29 12.2 -8.52;
2246 6.58 12.2 -10.9; 2247 11.14 12.2 -10.9; 2248 12.89 12.2 -10.9;
2250 20.8 12.2 -10.9; 2251 11.56 12.2 -13.8; 2252 24.46 12.2 -16.12;
2253 4.98 12.2 -17.38; 2254 9.51 12.2 -17.38; 2255 11.56 12.2 -17.38;
2256 0 12.2 -19.17; 2257 1.6 12.2 -19.17; 2258 4.37 12.2 -19.17;
2259 27.88 12.2 -19.17; 2260 32.24 12.2 -19.17; 2261 34.38 12.2 -19.17;
2263 21.72 12.2 -20.42; 2264 24.46 12.2 -20.42; 2265 27.88 12.2 -20.42;
2266 16.34 12.2 -21.49; 2267 1.6 12.2 -22.59; 2268 4.37 12.2 -22.59;
2269 6.58 12.2 -22.59; 2270 9.51 12.2 -22.59; 2271 27.88 12.2 -22.86;
2272 32.24 12.2 -22.86; 2273 34.38 12.2 -22.86; 2274 17.03 12.2 -24.16;
2275 1.6 12.2 -26.22; 2276 6.58 12.2 -26.22; 2277 22.9 12.2 -26.22;
2278 6.73 12.2 -29.19; 2279 11.56 12.2 -30.94; 2280 14.29 12.2 -30.94;
2281 4.98 12.2 -33.39; 2282 6.73 12.2 -33.39; 2283 8.25 12.2 -33.39;
2284 17.11 12.2 -33.39; 2286 8.25 12.2 -34.99; 2287 11.56 12.2 -34.99;
2288 14.29 12.2 -34.95; 2289 17.11 12.2 -34.95; 2291 21.83 12.2 -35.45;
2292 0 12.2 -35.98; 2293 2.24 12.2 -35.98; 2294 4.98 12.2 -35.98;
2295 2.24 12.2 -39.41; 2296 8.25 12.2 -39.41; 2297 17.11 12.2 -39.41;
2298 21.83 12.2 -39.41; 2299 26.99 12.2 -4.03; 2300 26.99 12.2 -7.42;
2301 6.5 12.2 -13.8; 2302 6.5 12.2 -17.38; 2305 26.99 12.2 -10.9;
2308 6.58 15.25 -7.31; 2309 21.72 15.25 -24.16; 2310 25.49 15.25 -24.16;
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ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

Job Title: Royal Windgaes Phase- III

Client: Royal Shelter

Engineer: P.Ravichandran

2311 25.49 15.25 -26.22; 2315 28 15.25 -33.39; 2316 28 15.25 -35.45;
2317 28 15.25 -39.41; 2318 28 15.25 -31.44; 2320 29.52 15.25 -31.44;
2322 34.05 15.25 -31.44; 2323 32.24 15.25 -34.95; 2324 33.99 15.25 -39.41;
2325 33.99 15.25 -34.95; 2326 29.52 15.25 -29.65; 2327 34.05 15.25 -29.65;
2328 37.96 15.25 -27.97; 2329 34.05 15.25 -27.97; 2330 34.05 15.25 -28.2;
2331 29.52 15.25 -28.2; 2332 39.16 15.25 -34.95; 2333 39.16 15.25 -31.44;
2335 39.16 15.25 -39.41; 2341 25.94 15.25 -33.39; 2342 29.52 15.25 -26.22;
2343 34.85 15.25 -26.22; 2346 14.29 15.25 -10.9; 2347 4.98 15.25 0;
2348 10.04 15.25 0; 2349 17.53 15.25 0; 2350 22.63 15.25 0;
2351 1.9 15.25 -3.47; 2352 4.98 15.25 -3.47; 2353 6.58 15.25 -3.47;
2354 10.04 15.25 -3.58; 2355 13.19 15.25 -3.58; 2356 13.19 15.25 -3.73;
2357 17.53 15.25 -3.73; 2358 20.8 15.25 -4.03; 2360 10.04 15.25 -5.48;
2361 11.14 15.25 -5.48; 2362 14.29 15.25 -5.48; 2363 17.53 15.25 -5.48;
2365 20.8 15.25 -5.48; 2366 1.9 15.25 -7.31; 2367 4.98 15.25 -7.31;
2368 20.8 15.25 -7.42; 2369 25.79 15.25 -7.42; 2370 11.14 15.25 -8.52;
2371 12.89 15.25 -8.52; 2372 14.29 15.25 -8.52; 2373 6.58 15.25 -10.9;
2374 11.14 15.25 -10.9; 2375 12.89 15.25 -10.9; 2377 20.8 15.25 -10.9;
2378 11.56 15.25 -13.8; 2379 24.46 15.25 -16.12; 2380 4.98 15.25 -17.38;
2381 9.51 15.25 -17.38; 2382 11.56 15.25 -17.38; 2383 0 15.25 -19.17;
2384 1.6 15.25 -19.17; 2385 4.37 15.25 -19.17; 2386 27.88 15.25 -19.17;
2387 32.24 15.25 -19.17; 2388 34.38 15.25 -19.17; 2390 21.72 15.25 -20.42;
2391 24.46 15.25 -20.42; 2392 27.88 15.25 -20.42; 2393 16.34 15.25 -21.49;
2394 1.6 15.25 -22.59; 2395 4.37 15.25 -22.59; 2396 6.58 15.25 -22.59;
2397 9.51 15.25 -22.59; 2398 27.88 15.25 -22.86; 2399 32.24 15.25 -22.86;
2400 34.38 15.25 -22.86; 2401 17.03 15.25 -24.16; 2402 1.6 15.25 -26.22;
2403 6.58 15.25 -26.22; 2404 22.9 15.25 -26.22; 2405 6.73 15.25 -29.19;
2406 11.56 15.25 -30.94; 2407 14.29 15.25 -30.94; 2408 4.98 15.25 -33.39;
2409 6.73 15.25 -33.39; 2410 8.25 15.25 -33.39; 2411 17.11 15.25 -33.39;
2413 8.25 15.25 -34.99; 2414 11.56 15.25 -34.99; 2415 14.29 15.25 -34.95;
2416 17.11 15.25 -34.95; 2418 21.83 15.25 -35.45; 2419 0 15.25 -35.98;
2420 2.24 15.25 -35.98; 2421 4.98 15.25 -35.98; 2422 2.24 15.25 -39.41;
2423 8.25 15.25 -39.41; 2424 17.11 15.25 -39.41; 2425 21.83 15.25 -39.41;
2426 26.99 15.25 -4.03; 2427 26.99 15.25 -7.42; 2428 6.5 15.25 -13.8;
2429 6.5 15.25 -17.38; 2432 26.99 15.25 -10.9; 2435 6.58 18.3 -7.31;
2436 21.72 18.3 -24.16; 2437 25.49 18.3 -24.16; 2438 25.49 18.3 -26.22;
2439 27.88 18.3 -26.22; 2440 25.94 18.3 -29.19; 2441 25.94 18.3 -33.39;
2443 14.29 18.3 -10.9; 2444 4.98 18.3 0; 2445 10.04 18.3 0; 2446 17.53 18.3 0;
2447 1.9 18.3 -3.47; 2448 4.98 18.3 -3.47; 2449 6.58 18.3 -3.47;
2450 10.04 18.3 -3.58; 2451 13.19 18.3 -3.58; 2452 13.19 18.3 -3.73;
2453 17.53 18.3 -3.73; 2455 10.04 18.3 -5.48; 2456 11.14 18.3 -5.48;
2457 14.29 18.3 -5.48; 2458 17.53 18.3 -5.48; 2460 20.8 18.3 -5.48;
2461 1.9 18.3 -7.31; 2462 4.98 18.3 -7.31; 2464 11.14 18.3 -8.52;
2465 12.89 18.3 -8.52; 2466 14.29 18.3 -8.52; 2467 6.58 18.3 -10.9;
2468 11.14 18.3 -10.9; 2469 12.89 18.3 -10.9; 2471 20.8 18.3 -10.9;
2472 11.56 18.3 -13.8; 2473 24.46 18.3 -16.12; 2474 4.98 18.3 -17.38;
2475 9.51 18.3 -17.38; 2476 11.56 18.3 -17.38; 2477 0 18.3 -19.17;
2478 1.6 18.3 -19.17; 2479 4.37 18.3 -19.17; 2480 27.88 18.3 -19.17;
2482 21.72 18.3 -20.42; 2483 24.46 18.3 -20.42; 2484 27.88 18.3 -20.42;
2485 16.34 18.3 -21.49; 2486 1.6 18.3 -22.59; 2487 4.37 18.3 -22.59;
2488 6.58 18.3 -22.59; 2489 9.51 18.3 -22.59; 2490 27.88 18.3 -22.86;

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

2491 17.03 18.3 -24.16; 2492 1.6 18.3 -26.22; 2493 6.58 18.3 -26.22;
2494 22.9 18.3 -26.22; 2495 6.73 18.3 -29.19; 2496 11.56 18.3 -30.94;
2497 14.29 18.3 -30.94; 2498 4.98 18.3 -33.39; 2499 6.73 18.3 -33.39;
2500 8.25 18.3 -33.39; 2501 17.11 18.3 -33.39; 2503 8.25 18.3 -34.99;
2504 11.56 18.3 -34.99; 2505 14.29 18.3 -34.95; 2506 17.11 18.3 -34.95;
2508 21.83 18.3 -35.45; 2509 0 18.3 -35.98; 2510 2.24 18.3 -35.98;
2511 4.98 18.3 -35.98; 2512 2.24 18.3 -39.41; 2513 8.25 18.3 -39.41;
2514 17.11 18.3 -39.41; 2515 21.83 18.3 -39.41; 2516 6.5 18.3 -13.8;
2517 6.5 18.3 -17.38; 2524 32.2404 0 -35.4495; 2525 27.88 3.05 -26.22;
2527 25.94 3.05 -29.19; 2528 25.94 3.05 -33.39; 2532 27.88 6.1 -26.22;
2533 34.38 6.1 -26.22; 2534 25.94 6.1 -29.19; 2536 27.88 9.15 -26.22;
2537 34.38 9.15 -26.22; 2538 25.94 9.15 -29.19; 2539 34.38 0 -24.16;
2540 34.38 3.05 -24.16; 2541 34.38 6.1 -24.16; 2542 34.38 9.15 -24.16;
2543 34.38 12.2 -24.16; 2544 34.38 15.25 -24.16; 2548 35.29 -1 -26.22;
2549 35.29 0 -26.22; 2550 35.29 3.05 -26.22; 2551 35.29 6.1 -26.22;
2552 35.29 9.15 -26.22; 2557 27.88 12.2 -26.22; 2558 34.38 12.2 -26.22;
2560 25.94 12.2 -29.19; 2562 27.88 15.25 -26.22; 2563 34.38 15.25 -26.22;
2565 25.94 15.25 -29.19; 2570 34.38 18.3 -16.12; 2571 32.24 18.3 -19.17;
2572 34.38 18.3 -19.17; 2573 32.24 18.3 -22.86; 2574 34.38 18.3 -22.86;
2575 34.38 18.3 -24.16; 2576 25.94 3.05 -26.22; 2577 37.96 3.05 -26.22;
2578 25.94 3.05 -31.44; 2579 32.24 3.05 -31.44; 2580 37.96 3.05 -31.44;
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ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

Job Title: Royal Windgaes Phase- III

Client: Royal Shelter

Engineer: P.Ravichandran

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ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

Job Title: Royal Windgaes Phase- III

Client: Royal Shelter

Engineer: P.Ravichandran

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ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

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Job Title: Royal Windgaes Phase- III

Client: Royal Shelter

Engineer: P.Ravichandran

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ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

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Job Title: Royal Windgaes Phase- III

Client: Royal Shelter

Engineer: P.Ravichandran

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Job Title: Royal Windgaes Phase- III

Client: Royal Shelter

Engineer: P.Ravichandran

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ARCHITECTS PLUS TRICHY

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3723 2725 2726; 3724 2727 2549; 3726 2729 1461; 3727 2730 2097; 3728 2731 2218;
3729 2732 2343; 3730 2733 2661; 3736 2722 251; 3737 2723 326; 3738 2724 401;
3739 2725 476; 3740 2726 551; 3741 29 2721; 3742 2721 21;
SUPPORTS
170 TO 202 204 TO 215 218 TO 235 237 TO 244 1255 1258 1966 1969 1970 1974 -
2548 2643 2673 2698 2700 2720 PINNED
MEMBER RELEASE
1312 1313 1316 1322 1324 1326 1328 1331 1332 1464 1474 1476 1478 1480 1482 -
1483 TO 1486 1489 1490 1492 1493 1497 TO 1501 1504 1505 1507 1511 1515 1519 -
1520 TO 1522 1526 1527 1529 1532 1534 1535 1537 TO 1540 1542 1544 1546 1548 -
1550 1555 1556 1558 1564 1568 1571 1573 TO 1575 1577 1579 TO 1581 -
1583 TO 1585 1587 1589 1592 1594 1603 1608 TO 1612 1614 1618 TO 1621 1623 -
1624 1626 1628 TO 1632 1634 TO 1636 1639 1641 1644 1646 1648 TO 1650 1657 -
1659 TO 1661 1663 TO 1665 1668 1669 1671 1673 1678 1680 1681 1683 TO 1685 -
1688 1690 1691 1693 1698 1702 1703 1909 2225 2227 2229 2231 2233 TO 2237 -
2239 2240 2242 2243 2247 TO 2251 2254 2255 2257 2260 2264 2268 TO 2271 2275 -
2276 2278 2281 2283 2284 2286 TO 2289 2291 2292 2294 2296 2298 2303 2304 -
2307 2311 2313 TO 2315 2317 2320 2321 2324 2325 2327 2329 2332 2334 2341 -
2346 TO 2350 2352 2356 TO 2359 2361 2362 2364 TO 2369 2371 TO 2373 2376 2378 -
2381 2383 2385 TO 2387 2394 2396 TO 2398 2400 TO 2402 2405 2406 2410 2414 -
2416 2418 TO 2420 2423 2425 2426 2428 2429 2431 2432 2437 2453 2454 2457 -
2463 2465 2467 2469 2472 2473 2478 2506 2508 2510 2512 2514 TO 2518 2520 -
2521 2523 2524 2528 TO 2532 2535 2536 2538 2541 2545 2549 TO 2552 2556 2557 -
2559 2562 2564 2565 2567 TO 2570 2572 2573 2575 2577 2579 2584 2585 2588 -
2592 2594 TO 2596 2598 2601 2602 2659 2714 2759 2846 2940 3127 3221 3371 -
3468 3657 3660 START MX
3661 TO 3663 START MX
3666 TO 3668 3686 3692 3705 3710 START MX
3040 3384 3387 3506 3584 3587 3590 3593 3596 3599 3603 3607 3611 3615 3619 -
3622 3687 3689 TO 3691 3706 TO 3709 START MX
3290 3292 3536 3601 START MX
2433 2605 2606 2608 2610 2613 2615 2622 2627 TO 2631 2633 2637 TO 2640 2642 -
2643 2645 TO 2650 2652 TO 2654 2657 2662 2664 2666 TO 2668 2675 2677 TO 2679 -
2681 TO 2683 2686 2687 2691 2695 2697 2699 TO 2701 2704 2706 2707 2709 2710 -
2712 2713 2718 2734 2735 2738 2744 2746 2748 2750 2753 2754 2787 2789 2791 -
2793 2795 TO 2799 2801 2802 2804 2805 2809 TO 2813 2816 2817 2819 2822 2826 -
2830 TO 2833 2837 2838 2840 2843 2845 2848 TO 2851 2853 2854 2856 2858 2860 -
2865 2866 2869 2873 2875 TO 2877 2879 2882 2883 2886 2887 2889 2891 2894 -
2896 2903 2908 TO 2912 2914 2918 TO 2921 2923 2924 2926 TO 2931 2933 TO 2935 -
2938 2943 2945 2947 TO 2949 2956 2958 TO 2960 2962 TO 2964 2967 2968 2972 -
2976 2978 2980 TO 2982 2985 2987 2988 2990 2991 2993 2994 2999 3015 3016 -
3019 3025 3027 3029 3031 3034 3035 3068 3070 3072 3074 3076 TO 3080 3082 -
3083 3085 3086 3090 TO 3094 3097 3098 3100 3103 3107 3111 TO 3114 3118 3119 -
3121 3124 3126 3129 TO 3132 3134 3135 3137 3139 3141 3146 3147 3150 3154 -
3156 TO 3158 3160 3163 3164 3167 3168 3170 3172 3175 3177 3184 3189 TO 3193 -
3195 3199 TO 3202 3204 3205 3207 TO 3212 3214 TO 3216 3219 3224 3226 3228 -
3229 TO 3230 3237 3239 TO 3241 3243 TO 3245 3248 3249 3253 3257 3259 3261 -
3262 TO 3263 3266 3268 3269 3271 3272 3274 TO 3276 3280 3308 3310 3312 3315 -
3317 3319 3321 TO 3323 3330 START MX
3331 3332 3334 3512 3605 3609 3613 3617 START MX
```

ROYAL SHELTER TRICHY-19

ARCHITECTS PLUS TRICHY

Job Title: Royal Windgaes Phase- III

Client: Royal Shelter

Engineer: P.Ravichandran

```
3335 START MX
3553 3555 TO 3559 3561 3562 3658 3664 START MX
3339 TO 3342 3345 3346 3348 3354 3357 TO 3360 3365 3368 3370 3373 3374 3376 -
3377 3379 3381 3383 3392 3393 3396 3400 3402 TO 3404 3406 3409 3410 3413 -
3415 3417 3419 3422 3424 3431 3436 TO 3440 3442 3446 TO 3449 3451 3452 3454 -
3455 TO 3459 3461 TO 3463 3466 3471 3473 3475 TO 3477 3484 3486 TO 3488 3490 -
3491 TO 3492 3495 3496 3500 3502 3504 3508 3509 3511 3513 START MX
1899 TO 1902 2438 2439 2719 2720 2995 3000 3001 3281 3282 3514 3515 START MX
1460 TO 1463 1466 TO 1470 1472 1695 1697 1843 TO 1852 1859 2474 TO 2477 2480 -
2481 TO 2484 2486 TO 2498 2755 TO 2758 2761 TO 2765 2767 TO 2779 3036 TO 3039 -
3042 TO 3046 3048 TO 3060 START MX
1310 TO 1312 1314 1315 1317 TO 1320 1322 1323 1325 1328 TO 1330 1332 1473 -
1475 1477 1479 1481 TO 1485 1488 1489 1491 1492 1495 TO 1501 1503 1504 1506 -
1508 1510 1513 1514 1518 TO 1522 1526 TO 1528 1530 1531 1533 1534 1536 1537 -
1539 TO 1541 1543 1545 1547 1549 1554 1555 1557 1563 1568 1570 1573 1574 -
1578 1580 TO 1586 1588 1591 1593 1602 1607 1609 TO 1614 1617 1618 1620 1622 -
1623 TO 1625 1627 TO 1632 1634 TO 1636 1638 1643 1645 1647 1648 1650 1656 -
1658 1660 1662 1664 1665 1668 TO 1671 1673 1675 1676 1678 TO 1680 -
1682 TO 1684 1687 1689 1690 1692 1694 1696 1698 1701 1702 1704 1907 2224 -
2226 2228 2230 2232 TO 2236 2239 2241 2242 2245 TO 2251 2253 2254 2256 2259 -
2262 2263 2267 TO 2271 2275 TO 2277 2279 2280 2282 2283 2285 2286 -
2288 TO 2290 2293 2295 2297 2302 2303 2306 2311 2313 2314 2320 TO 2322 2324 -
2325 TO 2326 2328 2331 2333 2340 2345 2347 TO 2352 2355 2356 2358 -
2360 TO 2363 2365 TO 2369 2371 TO 2373 2375 2380 2382 2384 2385 2387 2393 -
2395 2397 2399 2401 2402 2405 TO 2407 2410 2414 2415 2417 TO 2419 2422 2424 -
2425 2427 2429 TO 2431 2451 TO 2453 2455 2456 2458 TO 2461 2463 2464 2466 -
2469 TO 2471 2473 2484 2505 2507 2509 2511 2513 TO 2517 2520 2522 2523 2526 -
2527 TO 2532 2534 2535 2537 2540 2543 2544 2548 TO 2552 2556 TO 2558 2560 -
2561 2563 2564 2566 2567 2569 TO 2571 2574 2576 2578 2583 2584 2587 2592 -
2594 2595 2597 2601 END MX
2688 2714 2729 TO 2731 2878 2969 2995 3011 3012 3250 END MX
3276 3294 3295 3302 3584 3686 3705 END MX
1538 1640 2287 2377 2568 2658 2849 2939 3130 3220 3374 3467 3653 END MX
3303 3690 3708 END MX
3497 3506 3512 3520 TO 3522 3525 3526 3538 3578 TO 3582 3587 3623 -
3663 TO 3665 3726 3727 END MX
2316 2433 2449 2450 2602 2603 2605 TO 2607 2609 2612 2614 2621 2626 -
2628 TO 2633 2636 2637 2639 2641 TO 2644 2646 TO 2650 2652 TO 2654 2656 2661 -
2663 2665 2666 2668 2674 2676 2678 2680 2682 2683 2686 2687 2691 2695 2696 -
2698 TO 2700 2703 2705 2706 2708 2710 TO 2712 2732 TO 2734 2736 2737 2739 -
2740 TO 2742 2744 2745 2747 2750 TO 2752 2754 2786 2788 2790 2792 -
2794 TO 2798 2801 2803 2804 2807 TO 2813 2815 2816 2818 2821 2824 2825 2829 -
2830 TO 2833 2837 TO 2839 2841 2842 2844 2845 2847 2848 2850 TO 2852 2855 -
2857 2859 2864 2865 2868 2873 2875 2876 2882 TO 2884 2886 TO 2888 2890 2893 -
2895 2902 2907 2909 TO 2914 2917 2918 2920 2922 TO 2925 2927 TO 2931 2933 -
2934 TO 2935 2937 2942 2944 2946 2947 2949 2955 2957 2959 2961 2963 2964 2967 -
2968 2972 2976 2977 2979 TO 2981 2984 2986 2987 2989 2991 TO 2993 -
3013 TO 3015 3017 3018 3020 TO 3023 3025 3026 3028 3031 TO 3033 3035 3067 -
3069 3071 3073 3075 TO 3079 3082 3084 3085 3088 TO 3094 3096 3097 3099 3102 -
3105 3106 3110 TO 3114 3118 TO 3120 3122 3123 3125 3126 3128 3129 -
```

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

```
3131 TO 3133 3136 3138 3140 3145 3146 3149 3154 3156 3157 3163 TO 3165 3167 -
3168 TO 3169 3171 3174 3176 3183 3188 3190 TO 3195 3198 3199 3201 -
3203 TO 3206 3208 TO 3212 3214 TO 3216 3218 3223 3225 3227 3228 3230 3236 -
3238 3240 3242 3244 3245 3248 3249 3253 3257 3258 3260 TO 3262 3265 3267 -
3268 3270 3272 TO 3274 3304 END MX
3305 3306 3308 3309 3311 3314 3316 3318 3320 TO 3323 END MX
3330 3331 3333 3334 3337 TO 3342 3630 3631 3691 3692 3700 3701 3709 3710 END MX
3344 3345 3347 END MX
3350 3523 3524 3590 3593 3596 3666 TO 3668 3728 END MX
2448 3010 3298 3301 3519 3729 END MX
1859 3405 3555 TO 3561 3620 3730 END MX
3352 3353 3356 TO 3360 3364 3366 3367 3369 3370 3372 3373 3375 3378 3380 3382 -
3391 3392 3395 3400 3402 3403 3409 TO 3411 3413 3415 3416 3418 3421 3423 -
3430 3435 3437 TO 3442 3445 3446 3448 3450 TO 3453 3455 TO 3459 3461 TO 3463 -
3470 3472 3474 3475 3477 3483 3485 3487 3489 3491 3492 3495 3496 3500 3502 -
3503 3505 3507 3508 3510 3599 3601 END MX
1899 1900 1903 1904 2438 2439 2719 2720 3000 3001 3281 3282 3514 3515 END MX
1460 1462 TO 1464 1466 1469 1695 1844 TO 1854 2474 2476 TO 2478 2480 2483 -
2487 2490 TO 2500 2755 2757 TO 2759 2761 2764 2768 2771 TO 2781 3036 3038 -
3039 TO 3040 3042 3045 3049 3052 TO 3062 END MX
3283 END MX
1872 END MX
3388 3606 3610 3614 3618 END MX
1515 END MX
1906 START MX
1907 3653 START MX
1895 END MX
3548 START MX
3551 START MX
3540 END MX
3539 END MX
3533 START MX
3537 END MX
1559 END MX
3324 END MX
1560 START MX
1470 END MX
2765 END MX
3046 END MX
1576 END MX
3621 START MX
3652 START MX
1511 END MX
3665 START MX
3659 START MX
3465 END MX
3694 3711 START MX
3633 3703 END MX
3631 3701 START MX
1898 START MX
```

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

ANNEXURE-C

RC DESIGN OF ISOLATD FOOTING

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

Royal Windgates PH-III, Trichy.

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

ANNEXURE-D

RC DESIGN OF COLUMN





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: 3050.0 mm CROSS SECTION: 530.0 mm X 300.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 330 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	1400.42	
INITIAL MOMENTS	:	117.80	4.61
MOMENTS DUE TO MINIMUM ECC.	:	28.01	33.28
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	117.80	33.28

REQD. STEEL AREA : 2260.77 Sq.mm.
REQD. CONCRETE AREA: 156739.22 Sq.mm.
MAIN REINFORCEMENT : Provide 20 - 12 dia. (1.42%, 2261.95 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 : 2963.77 Muz1 : 123.22 Muy1 : 244.17

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: 330 Puz : 2964.19 Muz : 123.25 Muy : 244.24 IR: 0.99

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: 3050.0 mm CROSS SECTION: 230.0 mm X 460.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 256 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	565.20	
INITIAL MOMENTS	:	34.37	8.75

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

```
MOMENTS DUE TO MINIMUM ECC.          :      12.11                11.30

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

TOTAL DESIGN MOMENTS                 :      34.37                11.30

REQD. STEEL AREA   :      337.94 Sq.mm.
REQD. CONCRETE AREA:   105462.06 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 :   1550.46   Muz1 :     94.79   Muy1 :     44.60

INTERACTION RATIO: 0.45 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)
----------------------------------------------------------
WORST LOAD CASE:     8
END JOINT:   256 Puz :   1755.38   Muz :    127.91   Muy :     55.36   IR: 0.35
================================================================================


--------------------------------------------------------------------------------

        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:  3050.0 mm   CROSS SECTION:  230.0 mm X  530.0 mm  COVER: 40.0 mm

** GUIDING LOAD CASE:     8 END JOINT:   257  SHORT COLUMN


DESIGN FORCES (KNS-MET)
-----------------------
DESIGN AXIAL FORCE (Pu)              :    1338.23

                                          About Z              About Y
INITIAL MOMENTS                      :      35.26                33.13
MOMENTS DUE TO MINIMUM ECC.          :      31.81                26.76

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

TOTAL DESIGN MOMENTS                 :      35.26                33.13

REQD. STEEL AREA   :      800.14 Sq.mm.
REQD. CONCRETE AREA:   100017.02 Sq.mm.
MAIN REINFORCEMENT : Provide   8 - 12 dia. (0.74%,    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 PLUS TRICHY

Puz : 1934.90 Muzl : 108.20 Muyl : 43.18

INTERACTION RATIO: 0.75 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 332 Puz : 1972.73 Muz : 116.86 Muy : 45.76 IR: 0.75

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: 3050.0 mm CROSS SECTION: 230.0 mm X 680.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 258 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 1523.21

		About Z	About Y
INITIAL MOMENTS	:	128.99	0.32
MOMENTS DUE TO MINIMUM ECC.	:	43.82	30.46
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	128.99	30.46

REQD. STEEL AREA : 910.74 Sq.mm.
REQD. CONCRETE AREA: 155489.28 Sq.mm.
MAIN REINFORCEMENT : Provide 12 - 12 dia. (0.87%, 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 : 2440.63 Muzl : 200.59 Muyl : 61.59

INTERACTION RATIO: 0.77 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 258 Puz : 2602.02 Muz : 235.53 Muy : 68.79 IR: 0.63

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: 3050.0 mm CROSS SECTION: 230.0 mm X 610.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 259 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu)	: 1910.89	
	About Z	About Y
INITIAL MOMENTS	: 49.46	21.14
MOMENTS DUE TO MINIMUM ECC.	: 50.51	38.22
SLENDERNESS RATIOS	: -	-
MOMENTS DUE TO SLENDERNESS EFFECT	: -	-
MOMENT REDUCTION FACTORS	: -	-
ADDITION MOMENTS (Maz and May)	: -	-
TOTAL DESIGN MOMENTS	: 50.51	38.22

REQD. STEEL AREA : 1571.36 Sq.mm.
REQD. CONCRETE AREA: 138728.66 Sq.mm.
MAIN REINFORCEMENT : Provide 8 - 16 dia. (1.15%, 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 : 2462.10 Muzl : 130.42 Muyl : 42.30

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: 258 Puz : 2602.02 Muz : 235.53 Muy : 68.79 IR: 0.63

C O L U M N N O. 216 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3050.0 mm CROSS SECTION: 230.0 mm X 460.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 260 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu)	: 1417.66	
	About Z	About Y
INITIAL MOMENTS	: 16.40	14.94
MOMENTS DUE TO MINIMUM ECC.	: 30.39	28.35
SLENDERNESS RATIOS	: -	-
MOMENTS DUE TO SLENDERNESS EFFECT	: -	-
MOMENT REDUCTION FACTORS	: -	-
ADDITION MOMENTS (Maz and May)	: -	-

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

```
TOTAL DESIGN MOMENTS                :      30.39             28.35

REQD. STEEL AREA    :     1184.96 Sq.mm.
REQD. CONCRETE AREA:   104615.05 Sq.mm.
MAIN REINFORCEMENT : Provide  12 - 12 dia. (1.28%,   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 :   1856.66   Muz1 :     74.95   Muy1 :     33.54

INTERACTION RATIO: 0.90 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)
----------------------------------------------------------
WORST LOAD CASE:     8
END JOINT:   260 Puz :   1918.92   Muz :     85.58   Muy :     37.49   IR: 0.73
-------------------------------------------------------------------------------


-------------------------------------------------------------------------------

        C O L U M N   N O.    217   D E S I G N   R E S U L T S

      M30                   Fe500 (Main)              Fe500 (Sec.)

LENGTH:  3050.0 mm   CROSS SECTION:  460.0 mm X  300.0 mm  COVER: 40.0 mm

** GUIDING LOAD CASE:     8 END JOINT:   261  SHORT COLUMN


DESIGN FORCES (KNS-MET)
-----------------------
DESIGN AXIAL FORCE (Pu)             :    1024.18

                                         About Z           About Y
INITIAL MOMENTS                     :      64.38            106.81
MOMENTS DUE TO MINIMUM ECC.         :      20.48             21.95

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

TOTAL DESIGN MOMENTS                :      64.38            106.81

REQD. STEEL AREA    :     1714.63 Sq.mm.
REQD. CONCRETE AREA:   136285.39 Sq.mm.
MAIN REINFORCEMENT : Provide  16 - 12 dia. (1.31%,   1809.56 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 :   2482.84   Muz1 :    107.30   Muy1 :    180.24

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: 261 Pux : 2517.16 Muz : 109.57 Muy : 184.88 IR: 0.97

C O L U M N N O. 218 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3050.0 mm CROSS SECTION: 230.0 mm X 380.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 262 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	497.38	
INITIAL MOMENTS	:	36.72	4.62
MOMENTS DUE TO MINIMUM ECC.	:	9.95	9.95
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	36.72	9.95

REQD. STEEL AREA : 297.39 Sq.mm.
REQD. CONCRETE AREA: 37173.33 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)

Pur : 1287.41 Muz1 : 65.11 Muy1 : 37.34

INTERACTION RATIO: 0.65 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 262 Pux : 1343.44 Muz : 78.89 Muy : 42.80 IR: 0.53

C O L U M N N O. 219 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3050.0 mm CROSS SECTION: 230.0 mm X 460.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 263 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 1184.17

		About Z	About Y
INITIAL MOMENTS	:	33.26	15.04
MOMENTS DUE TO MINIMUM ECC.	:	25.38	23.68
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	33.26	23.68

REQD. STEEL AREA : 708.02 Sq.mm.
REQD. CONCRETE AREA: 105091.99 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 : 1684.25 Muz1 : 78.80 Muy1 : 36.60

INTERACTION RATIO: 0.65 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 263 Puz : 1755.38 Muz : 89.95 Muy : 40.66 IR: 0.55

C O L U M N N O. 220 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3050.0 mm CROSS SECTION: 230.0 mm X 460.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 729 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 1422.26

		About Z	About Y
INITIAL MOMENTS	:	96.57	21.64
MOMENTS DUE TO MINIMUM ECC.	:	30.48	28.45
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	96.57	28.45

REQD. STEEL AREA : 2116.00 Sq.mm.
REQD. CONCRETE AREA: 103684.02 Sq.mm.
MAIN REINFORCEMENT : Provide 12 - 16 dia. (2.26%, 2412.74 Sq.mm.)

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 230 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 2193.23 Muz1 : 124.32 Muy1 : 52.32

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: 729 Puz : 2300.51 Muz : 139.75 Muy : 56.87 IR: 0.84

C O L U M N N O. 221 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3050.0 mm CROSS SECTION: 460.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 264 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	823.93	
INITIAL MOMENTS	:	34.17	20.82
MOMENTS DUE TO MINIMUM ECC.	:	16.48	17.66
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	34.17	20.82

REQD. STEEL AREA : 492.63 Sq.mm.
REQD. CONCRETE AREA: 105307.38 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 : 1606.39 Muz1 : 45.47 Muy1 : 97.86

INTERACTION RATIO: 0.74 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 339 Puz : 1755.38 Muz : 52.28 Muy : 119.50 IR: 0.81

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

C O L U M N N O. 222 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3050.0 mm CROSS SECTION: 230.0 mm X 460.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 265 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	1549.02	
INITIAL MOMENTS	:	89.10	29.87
MOMENTS DUE TO MINIMUM ECC.	:	33.20	30.98
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Max and May)	:	-	-
TOTAL DESIGN MOMENTS	:	89.10	30.98

REQD. STEEL AREA : 2369.92 Sq.mm.
REQD. CONCRETE AREA: 103430.09 Sq.mm.
MAIN REINFORCEMENT : Provide 12 - 16 dia. (2.28%, 2412.74 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 : 2285.03 Muzl : 122.91 Muyl : 51.31

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: 265 Puz : 2300.51 Muz : 126.09 Muy : 51.64 IR: 0.94

C O L U M N N O. 223 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3050.0 mm CROSS SECTION: 460.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 266 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	1371.91	
INITIAL MOMENTS	:	24.08	123.24
MOMENTS DUE TO MINIMUM ECC.	:	27.44	29.40

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-16

SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	27.44	123.24

REQD. STEEL AREA : 2542.85 Sq.mm.
REQD. CONCRETE AREA: 103257.16 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 : 2347.54 Muz1 : 61.29 Muy1 : 150.73

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: 266 Puz : 2847.91 Muz : 81.02 Muy : 221.10 IR: 0.63

C O L U M N N O. 224 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3050.0 mm CROSS SECTION: 460.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 267 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 920.04

		About Z	About Y
INITIAL MOMENTS	:	8.86	22.74
MOMENTS DUE TO MINIMUM ECC.	:	18.40	19.72
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	18.40	22.74

REQD. STEEL AREA : 550.10 Sq.mm.
REQD. CONCRETE AREA: 105249.91 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 PLUS TRICHY

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: 342 Puz : 1755.38 Muz : 50.23 Muy : 113.63 IR: 0.32

C O L U M N N O. 225 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3050.0 mm CROSS SECTION: 300.0 mm X 530.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 268 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	2302.79	
INITIAL MOMENTS	:	133.82	70.33
MOMENTS DUE TO MINIMUM ECC.	:	54.73	46.06
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	133.82	70.33

REQD. STEEL AREA : 3307.20 Sq.mm.
REQD. CONCRETE AREA: 155692.78 Sq.mm.
MAIN REINFORCEMENT : Provide 12 - 20 dia. (2.37%, 3769.91 Sq.mm.)
(Equally distributed)
TIE REINFORCEMENT : Provide 8 mm dia. rectangular ties @ 300 mm c/c

SECTION CAPACITY BASED ON REINFORCEMENT REQUIRED (KNS-MET)

Puz : 3342.05 Muz1 : 204.63 Muy1 : 103.36

INTERACTION RATIO: 0.96 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 343 Puz : 3509.32 Muz : 235.85 Muy : 116.25 IR: 0.81

C O L U M N N O. 226 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3050.0 mm CROSS SECTION: 530.0 mm X 230.0 mm COVER: 40.0 mm

ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

** GUIDING LOAD CASE: 8 END JOINT: 269 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	2154.21	
INITIAL MOMENTS	:	4.82	12.71
MOMENTS DUE TO MINIMUM ECC.	:	43.08	51.20
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Max and May)	:	-	-
TOTAL DESIGN MOMENTS	:	43.08	51.20

REQD. STEEL AREA : 3235.66 Sq.mm.
REQD. CONCRETE AREA: 118664.34 Sq.mm.
MAIN REINFORCEMENT : Provide 8 - 25 dia. (3.22%, 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 : 2815.34 Muz1 : 49.54 Muy1 : 143.19

INTERACTION RATIO: 0.90 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 8
END JOINT: 269 Puz : 3065.26 Muz : 62.46 Muy : 191.88 IR: 0.59

C O L U M N N O. 227 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3050.0 mm CROSS SECTION: 460.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 270 SHORT COLUMN

DESIGN FORCES (KNS-MET)

		About Z	About Y
DESIGN AXIAL FORCE (Pu)	:	924.20	
INITIAL MOMENTS	:	16.45	117.37
MOMENTS DUE TO MINIMUM ECC.	:	18.48	19.81
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Max and May)	:	-	-

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

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TOTAL DESIGN MOMENTS                :      18.48            117.37

REQD. STEEL AREA    :      1436.72 Sq.mm.
REQD. CONCRETE AREA:    104363.30 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 :   1947.68   Muz1 :     57.50   Muy1 :    135.91

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:   270 Puz :   2009.77   Muz :     60.55   Muy :    147.02   IR: 0.91
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        C O L U M N   N O.    228  D E S I G N   R E S U L T S

      M30                    Fe500 (Main)              Fe500 (Sec.)

LENGTH:  3050.0 mm   CROSS SECTION:  230.0 mm X  300.0 mm  COVER: 40.0 mm

** GUIDING LOAD CASE:    8 END JOINT:   271  SHORT COLUMN


DESIGN FORCES (KNS-MET)
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DESIGN AXIAL FORCE (Pu)             :     328.38

                                        About Z             About Y
INITIAL MOMENTS                     :       8.97               4.20
MOMENTS DUE TO MINIMUM ECC.         :       6.57               6.57

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

TOTAL DESIGN MOMENTS                :       8.97               6.57

REQD. STEEL AREA    :      196.34 Sq.mm.
REQD. CONCRETE AREA:    24542.80 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 :   1002.48   Muz1 :     37.49   Muy1 :     28.00

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

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)
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ARCHITECTS PLUS TRICHY

ROYAL SHELTER TRICHY-18

END JOINT: 346 Puz : 1095.04 Muz : 50.31 Muy : 35.81 IR: 0.30

C O L U M N N O. 229 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3050.0 mm CROSS SECTION: 230.0 mm X 460.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 272 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 929.50

		About Z	About Y
INITIAL MOMENTS	:	41.53	8.58
MOMENTS DUE TO MINIMUM ECC.	:	19.92	18.59
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	41.53	18.59

REQD. STEEL AREA : 555.75 Sq.mm.
REQD. CONCRETE AREA: 105244.26 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 : 1629.21 Muz1 : 94.70 Muy1 : 44.03

INTERACTION RATIO: 0.51 (as per Cl. 39.6, IS456:2000)

SECTION CAPACITY BASED ON REINFORCEMENT PROVIDED (KNS-MET)

WORST LOAD CASE: 6
END JOINT: 347 Puz : 1755.38 Muz : 113.00 Muy : 50.00 IR: 0.43

C O L U M N N O. 230 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3050.0 mm CROSS SECTION: 230.0 mm X 460.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 2020 SHORT COLUMN

DESIGN FORCES (KNS-MET)

ROYAL SHELTER TRICHY-18
ARCHITECTS PLUS TRICHY

DESIGN AXIAL FORCE (Pu) : 1212.41

		About Z	About Y
INITIAL MOMENTS	:	14.59	38.84
MOMENTS DUE TO MINIMUM ECC.	:	25.99	24.25
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	25.99	38.84

REQD. STEEL AREA : 1014.87 Sq.mm.
REQD. CONCRETE AREA: 104785.15 Sq.mm.
MAIN REINFORCEMENT : Provide 12 - 12 dia. (1.28%, 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 : 1795.18 Muz1 : 91.41 Muy1 : 41.34

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: 2020 Puz : 1918.92 Muz : 109.00 Muy : 47.46 IR: 0.79

C O L U M N N O. 231 D E S I G N R E S U L T S

M30 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3050.0 mm CROSS SECTION: 530.0 mm X 230.0 mm COVER: 40.0 mm

** GUIDING LOAD CASE: 8 END JOINT: 273 SHORT COLUMN

DESIGN FORCES (KNS-MET)

DESIGN AXIAL FORCE (Pu) : 1589.98

		About Z	About Y
INITIAL MOMENTS	:	0.50	44.95
MOMENTS DUE TO MINIMUM ECC.	:	31.80	37.79
SLENDERNESS RATIOS	:	-	-
MOMENTS DUE TO SLENDERNESS EFFECT	:	-	-
MOMENT REDUCTION FACTORS	:	-	-
ADDITION MOMENTS (Maz and May)	:	-	-
TOTAL DESIGN MOMENTS	:	31.80	44.95

REQD. STEEL AREA : 1235.86 Sq.mm.
REQD. CONCRETE AREA: 120664.13 Sq.mm.
MAIN REINFORCEMENT : Provide 12 - 12 dia. (1.11%, 1357.17 Sq.mm.)
(Equally distributed)





ANNEXURE-E

RC DESIGN OF BEAM





LENGTH: 1750.0 mm SIZE: 230.0 mm X 460.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	ME	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	0.00	0.00	8	125.99	0.00	8
	0.00	0.00	0.00	8			
145.8	0.00	18.20	0.00	8	123.60	0.00	8
	0.00	0.00	0.00	8			
291.7	0.00	36.03	0.00	8	120.76	0.00	8
	0.00	0.00	0.00	8			
437.5	0.00	53.44	0.00	8	117.99	0.00	8
	0.00	0.00	0.00	8			
583.3	0.00	70.43	0.00	8	115.09	0.00	8
	0.00	0.00	0.00	8			
729.2	0.00	86.94	0.00	8	111.25	0.00	8
	0.00	0.00	0.00	8			
875.0	0.00	102.95	0.00	8	107.98	0.00	8
	0.00	0.00	0.00	8			
1020.8	0.00	118.44	0.00	8	104.70	0.00	8
	0.00	0.00	0.00	8			
1166.7	0.00	133.42	0.00	8	100.86	0.00	8
	0.00	0.00	0.00	8			
1312.5	0.00	147.93	0.00	8	97.97	0.00	8
	0.00	0.00	0.00	8			
1458.3	0.00	162.00	0.00	8	95.20	0.00	8
	0.00	0.00	0.00	8			
1604.2	0.00	175.67	0.00	8	92.36	0.00	8
	0.00	0.00	0.00	8			
1750.0	0.00	188.96	0.00	8	89.97	0.00	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	0.00/ 402.12(2-16i)|	0.00/ 628.32(2-20i)|	8i @ 245 mm
145.8	0.00/ 402.12(2-16i)|	164.22/ 628.32(2-20i)|	8i @ 255 mm
291.7	0.00/ 402.12(2-16i)|	206.13/ 628.32(2-20i)|	8i @ 265 mm
437.5	0.00/ 402.12(2-16i)|	313.07/ 628.32(2-20i)|	8i @ 280 mm
583.3	0.00/ 402.12(2-16i)|	422.92/ 628.32(2-20i)|	8i @ 290 mm
729.2	0.00/ 402.12(2-16i)|	535.90/ 628.32(2-20i)|	8i @ 300 mm
875.0	0.00/ 402.12(2-16i)|	652.34/ 942.48(3-20i)|	8i @ 300 mm
1020.8	0.00/ 402.12(2-16i)|	772.95/ 942.48(3-20i)|	8i @ 300 mm
1166.7	0.00/ 402.12(2-16i)|	898.76/ 942.48(3-20i)|	8i @ 300 mm
1312.5	81.63/ 402.12(2-16i)|	989.65/1256.64(4-20i)|	8i @ 300 mm
1458.3	170.02/ 402.12(2-16i)|	1074.35/1256.64(4-20i)|	8i @ 300 mm
1604.2	255.84/ 402.12(2-16i)|	1156.60/1256.64(4-20i)|	8i @ 300 mm
1750.0	339.32/ 402.12(2-16i)|	1236.61/1256.64(4-20i)|	8i @ 300 mm

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

	0.00	0.00	0.00	8				
1980.0	0.00	67.88	9.76	8		-8.69	9.76	8
	0.00	0.00	0.00	8				
2310.0	0.00	62.42	9.76	8		-23.14	9.76	8
	0.00	0.00	0.00	8				
2640.0	0.00	51.81	9.76	8		-40.49	9.76	8
	0.00	0.00	0.00	8				
2970.0	0.00	36.49	9.76	8		-52.59	9.76	8
	0.00	0.00	0.00	8				
3300.0	0.00	17.01	9.76	8		-64.30	9.76	8
	0.00	0.00	0.00	8				
3630.0	0.00	0.00	0.00	8		-74.33	9.76	8
	0.00	-6.01	9.76	8				
3960.0	0.00	0.00	0.00	8		-81.50	9.76	8
	0.00	-31.80	9.76	8				

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	337.82/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 175 mm
330.0	337.82/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 175 mm
660.0	0.00/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 175 mm
990.0	0.00/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 175 mm
1320.0	0.00/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 175 mm
1650.0	0.00/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 175 mm
1980.0	0.00/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 175 mm
2310.0	0.00/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 175 mm
2640.0	0.00/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 175 mm
2970.0	0.00/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 175 mm
3300.0	337.82/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 175 mm
3630.0	337.82/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 175 mm
3960.0	337.82/ 339.29(3-12i)|	0.00/ 339.29(3-12i)|	8i @ 175 mm

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

SHEAR DESIGN RESULTS AT 1094.0 mm AWAY FROM START SUPPORT
VY = 35.22 MX = 9.76 LD= 8
Provide 2 Legged 8i @ 175 mm c/c

SHEAR DESIGN RESULTS AT 979.0 mm AWAY FROM END SUPPORT
VY = -54.73 MX = 9.76 LD= 8
Provide 2 Legged 8i @ 175 mm c/c

Provide 3-12i along each face of the beam (Side face reinf.)

B E A M N O. 1328 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	0.00/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 300 mm
171.7	0.00/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 300 mm
343.3	0.00/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 300 mm
515.0	0.00/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 300 mm
686.7	0.00/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 300 mm
858.3	0.00/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 300 mm
1030.0	0.00/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 300 mm
1201.7	0.00/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 300 mm
1373.3	0.00/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 300 mm
1545.0	0.00/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 300 mm
1716.7	337.82/ 339.29(3-12i)|	0.00/ 339.29(3-12i)|	8i @ 300 mm
1888.3	337.82/ 339.29(3-12i)|	0.00/ 339.29(3-12i)|	8i @ 300 mm
2060.0	337.82/ 339.29(3-12i)|	0.00/ 339.29(3-12i)|	8i @ 300 mm

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

SHEAR DESIGN RESULTS AT 1094.0 mm AWAY FROM END SUPPORT
VY = -52.58 MX = 0.00 LD= 8
Provide 2 Legged 8i @ 300 mm c/c

Provide 3-12i along each face of the beam (Side face reinf.)

B E A M N O. 1327 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 900.0 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	2.60	9.76	8	64.13	9.76	8
	0.00	0.00	0.00	8			
330.0	0.00	22.65	9.76	8	56.96	9.76	8
	0.00	0.00	0.00	8			
660.0	0.00	39.94	9.76	8	46.93	9.76	8
	0.00	0.00	0.00	8			
990.0	0.00	53.69	9.76	8	35.22	9.76	8
	0.00	0.00	0.00	8			
1320.0	0.00	63.27	9.76	8	23.12	9.76	8
	0.00	0.00	0.00	8			
1650.0	0.00	68.15	9.76	8	5.77	9.76	8

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

1137.5	0.00/ 339.29(3-121)	337.82/ 339.29(3-121)	8i @ 300 mm
1300.0	0.00/ 339.29(3-121)	337.82/ 339.29(3-121)	8i @ 300 mm
1462.5	0.00/ 339.29(3-121)	337.82/ 339.29(3-121)	8i @ 300 mm
1625.0	0.00/ 339.29(3-121)	337.82/ 339.29(3-121)	8i @ 300 mm
1787.5	0.00/ 339.29(3-121)	337.82/ 339.29(3-121)	8i @ 300 mm
1950.0	0.00/ 339.29(3-121)	337.82/ 339.29(3-121)	8i @ 300 mm

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

SHEAR DESIGN RESULTS AT 1094.0 mm AWAY FROM START SUPPORT
VY = 88.40 MX = 0.00 LD= 8
Provide 2 Legged 8i @ 300 mm c/c

Provide 3-12i along each face of the beam (Side face reinf.)

B E A M N O. 1326 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 900.0 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	75.18	0.00	8	-29.64	0.00	8
	0.00	0.00	0.00	8			
171.7	0.00	69.81	0.00	8	-32.89	0.00	8
	0.00	0.00	0.00	8			
343.3	0.00	63.85	0.00	8	-36.74	0.00	8
	0.00	0.00	0.00	8			
515.0	0.00	57.24	0.00	8	-40.50	0.00	8
	0.00	0.00	0.00	8			
686.7	0.00	49.93	0.00	8	-44.44	0.00	8
	0.00	0.00	0.00	8			
858.3	0.00	41.87	0.00	8	-49.68	0.00	8
	0.00	0.00	0.00	8			
1030.0	0.00	32.99	0.00	8	-54.14	0.00	8
	0.00	0.00	0.00	8			
1201.7	0.00	23.28	0.00	8	-58.60	0.00	8
	0.00	0.00	0.00	8			
1373.3	0.00	12.76	0.00	8	-63.85	0.00	8
	0.00	0.00	0.00	8			
1545.0	0.00	1.47	0.00	8	-67.78	0.00	8
	0.00	0.00	0.00	8			
1716.7	0.00	0.00	0.00	8	-71.55	0.00	8
	0.00	-10.50	0.00	8			
1888.3	0.00	0.00	0.00	8	-75.40	0.00	8
	0.00	-23.13	0.00	8			
2060.0	0.00	0.00	0.00	8	-78.64	0.00	8
	0.00	-36.35	0.00	8			





Provide 3-12i along each face of the beam (Side face reinf.)

B E A M N O. 1325 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1950.0 mm SIZE: 230.0 mm X 900.0 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	151.25	0.00	8
	0.00	-117.48	0.00	8			
162.5	0.00	-93.60	0.00	8	142.70	0.00	8
	0.00	0.00	0.00	8			
325.0	0.00	0.00	0.00	8	133.22	0.00	8
	0.00	-71.20	0.00	8			
487.5	0.00	0.00	0.00	8	125.57	0.00	8
	0.00	-50.31	0.00	8			
650.0	0.00	0.00	0.00	8	114.79	0.00	8
	0.00	-31.16	0.00	8			
812.5	0.00	0.00	0.00	8	103.78	0.00	8
	0.00	-13.53	0.00	8			
975.0	0.00	2.62	0.00	8	94.42	0.00	8
	0.00	0.00	0.00	8			
1137.5	0.00	17.39	0.00	8	86.01	0.00	8
	0.00	0.00	0.00	8			
1300.0	0.00	30.88	0.00	8	77.84	0.00	8
	0.00	0.00	0.00	8			
1462.5	0.00	43.25	0.00	8	74.15	0.00	8
	0.00	0.00	0.00	8			
1625.0	0.00	54.62	0.00	8	68.26	0.00	8
	0.00	0.00	0.00	8			
1787.5	0.00	65.22	0.00	8	63.23	0.00	8
	0.00	0.00	0.00	8			
1950.0	0.00	75.18	0.00	8	59.69	0.00	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	337.82/ 339.29(3-12i)|	0.00/ 339.29(3-12i)|	8i @ 300 mm
162.5	337.82/ 339.29(3-12i)|	0.00/ 339.29(3-12i)|	8i @ 300 mm
325.0	337.82/ 339.29(3-12i)|	0.00/ 339.29(3-12i)|	8i @ 300 mm
487.5	337.82/ 339.29(3-12i)|	0.00/ 339.29(3-12i)|	8i @ 300 mm
650.0	337.82/ 339.29(3-12i)|	0.00/ 339.29(3-12i)|	8i @ 300 mm
812.5	337.82/ 339.29(3-12i)|	0.00/ 339.29(3-12i)|	8i @ 300 mm
975.0	0.00/ 339.29(3-12i)|	337.82/ 339.29(3-12i)|	8i @ 300 mm

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

SECTION (in mm)	FLEXURE (Maxm. Sagging/Hogging moments) P	MZ	MX	Load Case	SHEAR VY	MX	Load Case
0.0	0.00	90.83	0.00	8	-53.60	0.00	8
	0.00	0.00	0.00	8			
187.5	0.00	80.13	-0.00	8	-60.57	-0.00	8
	0.00	0.00	0.00	8			
375.0	0.00	68.01	-0.00	8	-68.12	-0.00	8
	0.00	0.00	0.00	8			
562.5	0.00	54.46	-0.00	8	-74.93	-0.00	8
	0.00	0.00	0.00	8			
750.0	0.00	39.27	-0.00	8	-85.25	-0.00	8
	0.00	0.00	0.00	8			
937.5	0.00	22.46	-0.00	8	-92.11	-0.00	8
	0.00	0.00	0.00	8			
1125.0	0.00	4.01	-0.00	8	-102.56	-0.00	8
	0.00	0.00	0.00	8			
1312.5	0.00	0.00	0.00	8	-113.65	-0.00	8
	0.00	-15.94	-0.00	8			
1500.0	0.00	0.00	0.00	8	-118.93	-0.00	8
	0.00	-37.64	-0.00	8			
1687.5	0.00	0.00	0.00	8	-130.15	-0.00	8
	0.00	-61.15	-0.00	8			
1875.0	0.00	0.00	0.00	8	-141.22	-0.00	8
	0.00	-86.21	-0.00	8			
2062.5	0.00	0.00	0.00	8	-145.45	-0.00	8
	0.00	-113.14	-0.00	8			
2250.0	0.00	0.00	0.00	8	-157.96	-0.00	8
	0.00	-141.98	-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	0.00/ 402.12(2-16i)|	337.82/ 339.29(3-12i)|	8i @ 300 mm
187.5	0.00/ 402.12(2-16i)|	337.82/ 339.29(3-12i)|	8i @ 300 mm
375.0	0.00/ 402.12(2-16i)|	337.82/ 339.29(3-12i)|	8i @ 300 mm
562.5	0.00/ 402.12(2-16i)|	337.82/ 339.29(3-12i)|	8i @ 300 mm
750.0	0.00/ 402.12(2-16i)|	337.82/ 339.29(3-12i)|	8i @ 300 mm
937.5	0.00/ 402.12(2-16i)|	337.82/ 339.29(3-12i)|	8i @ 300 mm
1125.0	0.00/ 402.12(2-16i)|	337.82/ 339.29(3-12i)|	8i @ 300 mm
1312.5	337.82/ 402.12(2-16i)|	0.00/ 339.29(3-12i)|	8i @ 300 mm
1500.0	337.82/ 402.12(2-16i)|	0.00/ 339.29(3-12i)|	8i @ 300 mm
1687.5	337.82/ 402.12(2-16i)|	0.00/ 339.29(3-12i)|	8i @ 300 mm
1875.0	337.82/ 402.12(2-16i)|	0.00/ 339.29(3-12i)|	8i @ 300 mm
2062.5	337.82/ 402.12(2-16i)|	0.00/ 339.29(3-12i)|	8i @ 300 mm
2250.0	394.63/ 402.12(2-16i)|	0.00/ 339.29(3-12i)|	8i @ 300 mm

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

SHEAR DESIGN RESULTS AT 1092.0 mm AWAY FROM END SUPPORT
VY = -109.35 MX = -0.00 LD= 8
Provide 2 Legged 8i @ 300 mm c/c

	0.00	0.00	0.00	8				
1732.5	0.00	89.14	0.00	8		29.51	0.00	8
	0.00	0.00	0.00	8				
1980.0	0.00	94.96	0.00	8		17.05	0.00	8
	0.00	0.00	0.00	8				
2227.5	0.00	97.89	0.00	8		6.22	0.00	8
	0.00	0.00	0.00	8				
2475.0	0.00	98.09	0.00	8		-4.24	0.00	8
	0.00	0.00	0.00	8				
2722.5	0.00	95.68	0.00	8		-14.89	0.00	8
	0.00	0.00	0.00	8				
2970.0	0.00	90.83	0.00	8		-24.27	0.00	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	337.82/ 339.29(3-12ϕ)	0.00/ 339.29(3-12ϕ)	8ϕ @ 300 mm
247.5	337.82/ 339.29(3-12ϕ)	0.00/ 339.29(3-12ϕ)	8ϕ @ 300 mm
495.0	0.00/ 339.29(3-12ϕ)	337.82/ 339.29(3-12ϕ)	8ϕ @ 300 mm
742.5	0.00/ 339.29(3-12ϕ)	337.82/ 339.29(3-12ϕ)	8ϕ @ 300 mm
990.0	0.00/ 339.29(3-12ϕ)	337.82/ 339.29(3-12ϕ)	8ϕ @ 300 mm
1237.5	0.00/ 339.29(3-12ϕ)	337.82/ 339.29(3-12ϕ)	8ϕ @ 300 mm
1485.0	0.00/ 339.29(3-12ϕ)	337.82/ 339.29(3-12ϕ)	8ϕ @ 300 mm
1732.5	0.00/ 339.29(3-12ϕ)	337.82/ 339.29(3-12ϕ)	8ϕ @ 300 mm
1980.0	0.00/ 339.29(3-12ϕ)	337.82/ 339.29(3-12ϕ)	8ϕ @ 300 mm
2227.5	0.00/ 339.29(3-12ϕ)	337.82/ 339.29(3-12ϕ)	8ϕ @ 300 mm
2475.0	0.00/ 339.29(3-12ϕ)	337.82/ 339.29(3-12ϕ)	8ϕ @ 300 mm
2722.5	0.00/ 339.29(3-12ϕ)	337.82/ 339.29(3-12ϕ)	8ϕ @ 300 mm
2970.0	0.00/ 339.29(3-12ϕ)	337.82/ 339.29(3-12ϕ)	8ϕ @ 300 mm

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

SHEAR DESIGN RESULTS AT 979.0 mm AWAY FROM START SUPPORT
VY = 66.40 MX = 0.00 LD= 8
Provide 2 Legged 8ϕ @ 300 mm c/c

Provide 3-12ϕ along each face of the beam (Side face reinf.)

B E A M N O. 1324 D E S I G N R E S U L T S

MZ5 Fe500 (Main) Fe500 (Sec.)

LENGTH: 2250.0 mm SIZE: 230.0 mm X 900.0 mm COVER: 30.0 mm

DESIGN LOAD SUMMARY (KN MET)

	0.00	0.00	0.00	8				
1716.7	0.00	6.30	0.00	8		-15.17	0.00	8
	0.00	0.00	0.00	8				
1888.3	0.00	3.40	0.00	8		-18.47	0.00	8
	0.00	0.00	0.00	8				
2060.0	0.00	0.00	0.00	8		-21.15	0.00	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	0.00/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 195 mm
171.7	0.00/ 226.19(2-12i)	103.22/ 226.19(2-12i)	8i @ 195 mm
343.3	0.00/ 226.19(2-12i)	103.22/ 226.19(2-12i)	8i @ 195 mm
515.0	0.00/ 226.19(2-12i)	103.22/ 226.19(2-12i)	8i @ 195 mm
686.7	0.00/ 226.19(2-12i)	103.22/ 226.19(2-12i)	8i @ 195 mm
858.3	0.00/ 226.19(2-12i)	103.60/ 226.19(2-12i)	8i @ 195 mm
1030.0	0.00/ 226.19(2-12i)	107.01/ 226.19(2-12i)	8i @ 195 mm
1201.7	0.00/ 226.19(2-12i)	103.60/ 226.19(2-12i)	8i @ 195 mm
1373.3	0.00/ 226.19(2-12i)	103.22/ 226.19(2-12i)	8i @ 195 mm
1545.0	0.00/ 226.19(2-12i)	103.22/ 226.19(2-12i)	8i @ 195 mm
1716.7	0.00/ 226.19(2-12i)	103.22/ 226.19(2-12i)	8i @ 195 mm
1888.3	0.00/ 226.19(2-12i)	103.22/ 226.19(2-12i)	8i @ 195 mm
2060.0	0.00/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 195 mm

B E A M N O. 1323 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 2970.0 mm SIZE: 230.0 mm X 900.0 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	92.46	0.00	8
	0.00	-25.38	0.00	8			
247.5	0.00	0.00	0.00	8	87.47	0.00	8
	0.00	-3.10	0.00	8			
495.0	0.00	17.73	0.00	8	80.69	0.00	8
	0.00	0.00	0.00	8			
742.5	0.00	36.80	0.00	8	73.56	0.00	8
	0.00	0.00	0.00	8			
990.0	0.00	53.82	0.00	8	65.54	0.00	8
	0.00	0.00	0.00	8			
1237.5	0.00	68.44	0.00	8	51.40	0.00	8
	0.00	0.00	0.00	8			
1485.0	0.00	80.26	0.00	8	40.72	0.00	8

ARCHITECTS PLUS TRICHY
ROYAL SHELTER TRICHY-18

171.7	103.22/ 226.19(2-121)	103.22/ 226.19(2-121)	8i @ 105 mm
343.3	103.22/ 226.19(2-121)	0.00/ 226.19(2-121)	8i @ 105 mm
515.0	103.22/ 226.19(2-121)	0.00/ 226.19(2-121)	8i @ 105 mm
686.7	103.22/ 226.19(2-121)	103.22/ 226.19(2-121)	8i @ 105 mm
858.3	0.00/ 226.19(2-121)	103.22/ 226.19(2-121)	8i @ 105 mm
1030.0	0.00/ 226.19(2-121)	103.22/ 226.19(2-121)	8i @ 105 mm
1201.7	0.00/ 226.19(2-121)	103.22/ 226.19(2-121)	8i @ 105 mm
1373.3	0.00/ 226.19(2-121)	103.22/ 226.19(2-121)	8i @ 105 mm
1545.0	0.00/ 226.19(2-121)	103.22/ 226.19(2-121)	8i @ 105 mm
1716.7	0.00/ 226.19(2-121)	103.22/ 226.19(2-121)	8i @ 105 mm
1888.3	103.22/ 226.19(2-121)	103.22/ 226.19(2-121)	8i @ 105 mm
2060.0	103.22/ 226.19(2-121)	0.00/ 226.19(2-121)	8i @ 105 mm

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

SHEAR DESIGN RESULTS AT 454.0 mm AWAY FROM START SUPPORT
VY = 18.66 MX = 0.50 LD= 8
Provide 2 Legged 8i @ 105 mm c/c

SHEAR DESIGN RESULTS AT 379.0 mm AWAY FROM END SUPPORT
VY = -9.15 MX = 0.50 LD= 8
Provide 2 Legged 8i @ 105 mm c/c

B E A M N O. 1322 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 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	21.15	0.00	8
	0.00	-0.00	0.00	8			
171.7	0.00	3.40	0.00	8	18.47	0.00	8
	0.00	0.00	0.00	8			
343.3	0.00	6.30	0.00	8	15.17	0.00	8
	0.00	0.00	0.00	8			
515.0	0.00	8.65	0.00	8	11.97	0.00	8
	0.00	0.00	0.00	8			
686.7	0.00	10.40	0.00	8	8.59	0.00	8
	0.00	0.00	0.00	8			
858.3	0.00	11.48	0.00	8	3.90	0.00	8
	0.00	0.00	0.00	8			
1030.0	0.00	11.85	0.00	8	0.00	0.00	8
	0.00	0.00	0.00	8			
1201.7	0.00	11.48	0.00	8	-3.90	0.00	8
	0.00	0.00	0.00	8			
1373.3	0.00	10.40	0.00	8	-8.59	0.00	8
	0.00	0.00	0.00	8			
1545.0	0.00	8.65	0.00	8	-11.97	0.00	8

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

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

SHEAR DESIGN RESULTS AT 722.5 mm AWAY FROM START SUPPORT
VY = 175.18 MX = 0.00 LD= 8
Provide 2 Legged 8i @ 160 mm c/c

B E A M N O. 1321 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 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	26.57	0.50	8
	0.00	-13.78	0.50	8			
171.7	0.00	-9.45	0.50	8	23.88	0.50	8
	0.00	0.00	0.00	8			
343.3	0.00	0.00	0.00	8	20.59	0.50	8
	0.00	-5.62	0.50	8			
515.0	0.00	0.00	0.00	8	17.39	0.50	8
	0.00	-2.35	0.50	8			
686.7	0.00	0.33	0.50	8	14.01	0.50	8
	0.00	0.00	0.00	8			
858.3	0.00	2.35	0.50	8	9.32	0.50	8
	0.00	0.00	0.00	8			
1030.0	0.00	3.64	0.50	8	5.42	0.50	8
	0.00	0.00	0.00	8			
1201.7	0.00	4.21	0.50	8	1.52	0.50	8
	0.00	0.00	0.00	8			
1373.3	0.00	4.05	0.50	8	-3.17	0.50	8
	0.00	0.00	0.00	8			
1545.0	0.00	3.23	0.50	8	-6.55	0.50	8
	0.00	0.00	0.00	8			
1716.7	0.00	1.82	0.50	8	-9.75	0.50	8
	0.00	0.00	0.00	8			
1888.3	0.00	0.00	0.00	8	-13.05	0.50	8
	0.00	-0.15	0.50	8			
2060.0	0.00	0.00	0.00	8	-15.73	0.50	8
	0.00	-2.62	0.50	8			

SUMMARY OF REINF. AREA (Sq.mm)

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)

ARCHITECTS PLUS TRICHY
ROYAL SHELTER TRICHY-18

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1830.0 mm SIZE: 230.0 mm X 460.0 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	194.53	0.00	8
	0.00	-220.01	0.00	8			
152.5	0.00	-190.63	0.00	8	188.89	0.00	8
	0.00	0.00	0.00	8			
305.0	0.00	0.00	0.00	8	187.09	0.00	8
	0.00	-161.98	0.00	8			
457.5	0.00	-134.07	0.00	8	181.17	0.00	8
	0.00	0.00	0.00	8			
610.0	0.00	0.00	0.00	8	175.25	0.00	8
	0.00	-106.72	0.00	8			
762.5	0.00	0.00	0.00	8	173.73	0.00	8
	0.00	-80.11	0.00	8			
915.0	0.00	0.00	0.00	8	167.81	0.00	8
	0.00	-54.24	0.00	8			
1067.5	0.00	0.00	0.00	8	161.89	0.00	8
	0.00	-28.93	0.00	8			
1220.0	0.00	0.00	0.00	8	160.36	0.00	8
	0.00	-4.36	0.00	8			
1372.5	0.00	19.47	0.00	8	154.44	0.00	8
	0.00	0.00	0.00	8			
1525.0	0.00	42.74	0.00	8	148.52	0.00	8
	0.00	0.00	0.00	8			
1677.5	0.00	65.28	0.00	8	147.00	0.00	8
	0.00	0.00	0.00	8			
1830.0	0.00	87.08	0.00	8	141.08	0.00	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	1428.34/1472.62(3-25i)	543.52/ 565.49(5-12i)	8i @ 145 mm
152.5	1251.29/1472.62(3-25i)	359.29/ 452.39(4-12i)	8i @ 155 mm
305.0	1078.67/1472.62(3-25i)	179.67/ 226.19(2-12i)	8i @ 155 mm
457.5	910.47/ 981.75(2-25i)	4.66/ 226.19(2-12i)	8i @ 150 mm
610.0	686.67/ 981.75(2-25i)	0.00/ 226.19(2-12i)	8i @ 160 mm
762.5	492.05/ 981.75(2-25i)	0.00/ 226.19(2-12i)	8i @ 160 mm
915.0	320.29/ 981.75(2-25i)	0.00/ 226.19(2-12i)	8i @ 170 mm
1067.5	165.78/ 981.75(2-25i)	0.00/ 226.19(2-12i)	8i @ 180 mm
1220.0	165.78/ 981.75(2-25i)	0.00/ 226.19(2-12i)	8i @ 185 mm
1372.5	0.00/ 981.75(2-25i)	165.78/ 226.19(2-12i)	8i @ 150 mm
1525.0	0.00/ 981.75(2-25i)	244.15/ 339.29(3-12i)	8i @ 170 mm
1677.5	0.00/ 981.75(2-25i)	384.60/ 452.39(4-12i)	8i @ 180 mm
1830.0	0.00/ 981.75(2-25i)	530.34/ 565.49(5-12i)	8i @ 200 mm





	0.00	0.00	0.00	8				
291.7	0.00	0.00	0.00	8		112.14	0.00	8
	0.00	-90.37	0.00	8				
437.5	0.00	0.00	0.00	8		109.37	0.00	8
	0.00	-74.21	0.00	8				
583.3	0.00	-58.48	0.00	8		106.47	0.00	8
	0.00	0.00	0.00	8				
729.2	0.00	0.00	0.00	8		102.63	0.00	8
	0.00	-43.23	0.00	8				
875.0	0.00	0.00	0.00	8		99.36	0.00	8
	0.00	-28.48	0.00	8				
1020.8	0.00	-14.25	0.00	8		96.08	0.00	8
	0.00	0.00	0.00	8				
1166.7	0.00	0.00	0.00	8		92.24	0.00	8
	0.00	-0.52	0.00	8				
1312.5	0.00	12.73	0.00	8		89.35	0.00	8
	0.00	0.00	0.00	8				
1458.3	0.00	25.55	0.00	8		86.57	0.00	8
	0.00	0.00	0.00	8				
1604.2	0.00	37.96	0.00	8		83.74	0.00	8
	0.00	0.00	0.00	8				
1750.0	0.00	49.99	0.00	8		81.35	0.00	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	836.11/ 904.78(8-12i)|	0.00/ 226.19(2-12i)|	8i @ 300 mm
145.8	691.18/ 791.68(7-12i)|	0.00/ 226.19(2-12i)|	8i @ 300 mm
291.7	553.36/ 565.49(5-12i)|	0.00/ 226.19(2-12i)|	8i @ 300 mm
437.5	443.03/ 452.39(4-12i)|	0.00/ 226.19(2-12i)|	8i @ 290 mm
583.3	341.24/ 452.39(4-12i)|	0.00/ 226.19(2-12i)|	8i @ 300 mm
729.2	247.06/ 339.29(3-12i)|	0.00/ 226.19(2-12i)|	8i @ 300 mm
875.0	165.78/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 285 mm
1020.8	165.78/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 300 mm
1166.7	165.78/ 226.19(2-12i)|	0.00/ 226.19(2-12i)|	8i @ 300 mm
1312.5	0.00/ 226.19(2-12i)|	165.78/ 226.19(2-12i)|	8i @ 300 mm
1458.3	0.00/ 226.19(2-12i)|	165.78/ 226.19(2-12i)|	8i @ 300 mm
1604.2	0.00/ 226.19(2-12i)|	215.46/ 226.19(2-12i)|	8i @ 300 mm
1750.0	0.00/ 226.19(2-12i)|	288.33/ 339.29(3-12i)|	8i @ 300 mm

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

SHEAR DESIGN RESULTS AT 643.9 mm AWAY FROM START SUPPORT
VY = 104.41 MX = 0.00 LD= 8
Provide 2 legged 8i @ 300 mm c/c

B E A M N O. 1320 D E S I G N R E S U L T S

	0.00	0.00	0.00	8				
1545.0	0.00	19.56	0.00	8		69.61	0.00	8
	0.00	0.00	0.00	8				
1716.7	0.00	31.21	0.00	8		66.25	0.00	8
	0.00	0.00	0.00	8				
1888.3	0.00	42.27	0.00	8		62.81	0.00	8
	0.00	0.00	0.00	8				
2060.0	0.00	52.81	0.00	8		59.98	0.00	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	764.46/ 791.68(7-12i)	0.00/ 226.19(2-12i)	8i @ 300 mm
171.7	620.43/ 678.58(6-12i)	0.00/ 226.19(2-12i)	8i @ 300 mm
343.3	491.55/ 565.49(5-12i)	0.00/ 226.19(2-12i)	8i @ 300 mm
515.0	382.28/ 452.39(4-12i)	0.00/ 226.19(2-12i)	8i @ 300 mm
686.7	282.37/ 339.29(3-12i)	0.00/ 226.19(2-12i)	8i @ 300 mm
858.3	190.97/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 300 mm
1030.0	165.78/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 300 mm
1201.7	165.78/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 300 mm
1373.3	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 300 mm
1545.0	0.00/ 226.19(2-12i)	165.78/ 226.19(2-12i)	8i @ 300 mm
1716.7	0.00/ 226.19(2-12i)	175.66/ 226.19(2-12i)	8i @ 300 mm
1888.3	0.00/ 226.19(2-12i)	241.32/ 339.29(3-12i)	8i @ 300 mm
2060.0	0.00/ 226.19(2-12i)	305.76/ 339.29(3-12i)	8i @ 300 mm

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

SHEAR DESIGN RESULTS AT 646.3 mm AWAY FROM START SUPPORT
VY = 91.94 MX = 0.00 LD= 8
Provide 2 Legged 8i @ 300 mm c/c

B E A M N O. 1319 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 1750.0 mm SIZE: 230.0 mm X 460.0 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	117.37	0.00	8
	0.00	-123.88	0.00	8			

SECTION (in mm)	TOP Reqd./Provided reinf.	BOTTOM Reqd./Provided reinf.	STIRRUPS (2 legged)
0.0	1300.27/1407.43(7-16i)	271.02/ 339.29(3-12i)	8i @ 155 mm
171.7	1109.68/1206.37(6-16i)	67.29/ 226.19(2-12i)	8i @ 155 mm
343.3	869.24/1005.31(5-16i)	0.00/ 226.19(2-12i)	8i @ 155 mm
515.0	634.83/ 804.25(4-16i)	0.00/ 226.19(2-12i)	8i @ 160 mm
686.7	440.97/ 603.19(3-16i)	0.00/ 226.19(2-12i)	8i @ 155 mm
858.3	266.51/ 402.12(2-16i)	0.00/ 226.19(2-12i)	8i @ 155 mm
1030.0	193.15/ 402.12(2-16i)	0.00/ 226.19(2-12i)	8i @ 160 mm
1201.7	0.00/ 402.12(2-16i)	193.15/ 226.19(2-12i)	8i @ 155 mm
1373.3	0.00/ 402.12(2-16i)	193.15/ 226.19(2-12i)	8i @ 160 mm
1545.0	0.00/ 402.12(2-16i)	325.68/ 339.29(3-12i)	8i @ 180 mm
1716.7	0.00/ 402.12(2-16i)	476.58/ 565.49(5-12i)	8i @ 205 mm
1888.3	0.00/ 402.12(2-16i)	641.16/ 678.58(6-12i)	8i @ 220 mm
2060.0	0.00/ 402.12(2-16i)	822.64/ 904.78(8-12i)	8i @ 240 mm

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

SHEAR DESIGN RESULTS AT 593.3 mm AWAY FROM START SUPPORT
VY = 196.70 MX = 0.00 Lb= 8
Provide 2 Legged 8i @ 155 mm c/c

B E A M N O. 1318 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 460.0 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	104.06	0.00	8
	0.00	-116.15	0.00	8			
171.7	0.00	-98.53	0.00	8	101.23	0.00	8
	0.00	0.00	0.00	8			
343.3	0.00	0.00	0.00	8	97.79	0.00	8
	0.00	-81.43	0.00	8			
515.0	0.00	0.00	0.00	8	94.43	0.00	8
	0.00	-64.92	0.00	8			
686.7	0.00	-49.02	0.00	8	90.91	0.00	8
	0.00	0.00	0.00	8			
858.3	0.00	0.00	0.00	8	86.07	0.00	8
	0.00	-33.82	0.00	8			
1030.0	0.00	-19.36	0.00	8	82.02	0.00	8
	0.00	0.00	0.00	8			
1201.7	0.00	0.00	0.00	8	77.97	0.00	8
	0.00	-5.66	0.00	8			
1373.3	0.00	7.30	0.00	8	73.14	0.00	8

2932.5	193.15/ 226.19(2-12i)	0.00/ 226.19(2-12i)	8i @ 300 mm
3258.3	226.77/ 339.29(3-12i)	0.00/ 226.19(2-12i)	8i @ 300 mm
3584.2	421.06/ 452.39(4-12i)	0.00/ 226.19(2-12i)	8i @ 300 mm
3910.0	659.61/ 678.58(6-12i)	0.00/ 226.19(2-12i)	8i @ 300 mm

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

SHEAR DESIGN RESULTS AT 679.5 mm AWAY FROM END SUPPORT
VY = -106.96 MX = 0.00 LD= 8
Provide 2 Legged 8i @ 300 mm c/c

B E A M N O. 1317 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 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	208.97	0.00	8
	0.00	-225.45	0.00	8			
171.7	0.00	-189.83	0.00	8	205.99	0.00	8
	0.00	0.00	0.00	8			
343.3	0.00	0.00	0.00	8	201.78	0.00	8
	0.00	-154.80	0.00	8			
515.0	0.00	0.00	0.00	8	197.76	0.00	8
	0.00	-120.46	0.00	8			
686.7	0.00	-86.94	0.00	8	193.38	0.00	8
	0.00	0.00	0.00	8			
858.3	0.00	0.00	0.00	8	186.39	0.00	8
	0.00	-54.31	0.00	8			
1030.0	0.00	0.00	0.00	8	180.97	0.00	8
	0.00	-22.72	0.00	8			
1201.7	0.00	7.82	0.00	8	175.55	0.00	8
	0.00	0.00	0.00	8			
1373.3	0.00	37.33	0.00	8	168.56	0.00	8
	0.00	0.00	0.00	8			
1545.0	0.00	65.92	0.00	8	164.18	0.00	8
	0.00	0.00	0.00	8			
1716.7	0.00	93.73	0.00	8	160.15	0.00	8
	0.00	0.00	0.00	8			
1888.3	0.00	120.83	0.00	8	155.95	0.00	8
	0.00	0.00	0.00	8			
2060.0	0.00	147.35	0.00	8	152.97	0.00	8
	0.00	0.00	0.00	8			

SUMMARY OF REINF. AREA (Sq.mm)

ROYAL SHELTER TRICHY-18

ARCHITECTS PLUS TRICHY

B E A M N O. 1316 D E S I G N R E S U L T S

M25 Fe500 (Main) Fe500 (Sec.)

LENGTH: 3910.0 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	82.20	0.00	8	23.34	0.00	8
	0.00	0.00	0.00	8			
325.8	0.00	88.23	0.00	8	13.71	0.00	8
	0.00	0.00	0.00	8			
651.7	0.00	90.81	0.00	8	2.35	0.00	8
	0.00	0.00	0.00	8			
977.5	0.00	89.68	0.00	8	-8.76	0.00	8
	0.00	0.00	0.00	8			
1303.3	0.00	84.29	0.00	8	-23.08	0.00	8
	0.00	0.00	0.00	8			
1629.2	0.00	74.54	0.00	8	-35.68	0.00	8
	0.00	0.00	0.00	8			
1955.0	0.00	59.74	0.00	8	-52.77	0.00	8
	0.00	0.00	0.00	8			
2280.8	0.00	40.15	0.00	8	-66.17	0.00	8
	0.00	0.00	0.00	8			
2606.7	0.00	15.50	0.00	8	-82.46	0.00	8
	0.00	0.00	0.00	8			
2932.5	0.00	0.00	0.00	8	-96.79	0.00	8
	0.00	-13.49	0.00	8			
3258.3	0.00	0.00	0.00	8	-107.90	0.00	8
	0.00	-46.75	0.00	8			
3584.2	0.00	0.00	0.00	8	-118.64	0.00	8
	0.00	-83.70	0.00	8			
3910.0	0.00	0.00	0.00	8	-127.27	0.00	8
	0.00	-123.85	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	0.00/ 226.19(2-12i)|	412.88/ 452.39(4-12i)|	8i @ 300 mm
325.8	0.00/ 226.19(2-12i)|	445.99/ 452.39(4-12i)|	8i @ 300 mm
651.7	0.00/ 226.19(2-12i)|	460.30/ 565.49(5-12i)|	8i @ 300 mm
977.5	0.00/ 226.19(2-12i)|	454.01/ 565.49(5-12i)|	8i @ 300 mm
1303.3	0.00/ 226.19(2-12i)|	424.28/ 452.39(4-12i)|	8i @ 300 mm
1629.2	0.00/ 226.19(2-12i)|	371.47/ 452.39(4-12i)|	8i @ 300 mm
1955.0	0.00/ 226.19(2-12i)|	293.36/ 339.29(3-12i)|	8i @ 300 mm
2280.8	0.00/ 226.19(2-12i)|	193.56/ 226.19(2-12i)|	8i @ 300 mm
2606.7	0.00/ 226.19(2-12i)|	193.15/ 226.19(2-12i)|	8i @ 300 mm

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.