DESIGN AND ANALYSIS OF THE SCHOOL BUILDING BY USING AUTOCAD AND STAD PRO

A Mini project report submitted to jawaharlal Nehru Technology

University in partial fulfillment of the requirement for the award of

the degree of

BACHELOR OF TECHNOLOGY IN

CIVIL ENGINEERING

Submitted by

B.SHASHANK ASIS: 17WJ1A0127

Under the esteemed Guidance of

G.L.Poornima,Asst.professor

DEPARTMENT OF CIVIL ENGINEERING GURU NANAK INSTITUTIONS TECHNICAL CAMPUS(Autonomous)

SCHOOL OF ENGINEERING & TECHNOLOG

Ibrahimpatnam RR District-501506 (Telangana)AY 2020 – 21

DECLARATION

I hereby declare that the mini project work entitled "" **Design and Analysis of the School building by using autocad and staad pro**" carried in the IV year of B.Tech (Civil Engineering) as per the requirement of Institution / University for further fulfillment of award of the degree of Bachelor of Technology during the academic year 2020 - 2021 in the Department of Civil Engineering, Guru Nanak Institutions Technical Campus affiliated to Jawaharlal Nehru Technological University Hyderabad, Under the supervision of **G.L.Poornima ,** Asst Professor (GNITC). I am very much thankful for her contribution in solving the technical queries and document preparation.

I further declare that the work reported in this project has not been submitted and will not be submitted, either in part or in full, for the award of any other degree or diploma in this institute or any other institute or university.

All sources of knowledge used have been duly acknowledged.

B .SHASHANK ASIS (17WJ1A0127)

CERTIFICATE

This is to certify that the mini project **"Design and Analysis of the School building by using autocad and staad pro"** is being submitted by B.Shashank Asis (17WJ1A0127) in the partial fulfillment for the award of the Degree of Bachelor of Technology in Civil Engineering to Jawaharlal Nehru Technological University is a record of bonafide work carried out by them under my guidance and supervision.

The results embodied in this mini project report have not been submitted to any other University or Institute for the award of any Degree orDiploma.

G.L.Poornima

Asst. Professor/Department of Civil Engineering,

GNITC

Dr. P. Jagadeesan, B.E., M.E., Ph.D.

External Examiner

Prof. & Head of the Department

ACKNOWLEDGEMENT

This is acknowledgement of the intensive drive and technical competence of many individuals who have contributed to the success of our project.

I would like to express my sincere thanks to **Dr. H. S. SAINI,** Managing Director, and **Dr. M. RAMALINGA REDDY,** Director, **Dr. RISHI SAYAL**, Associate Director, Guru Nanak Institutions Technical Campus, school of Engineering and Technology, for providing us with all the necessary facilities and support.

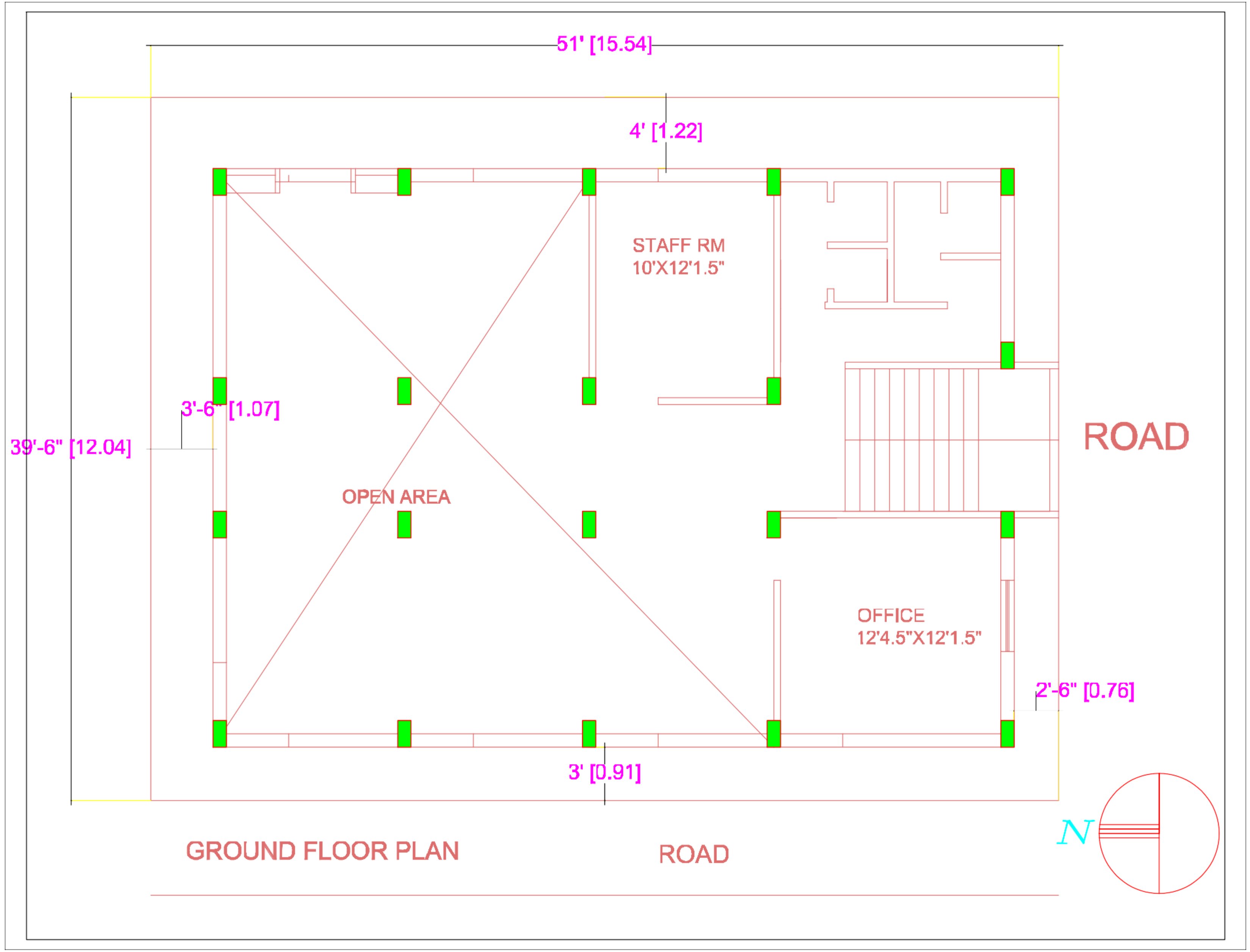
I place on record our sincere thanks to **Dr. P. JAGADEESAN,** Professor and Head of Civil Engineering Department for his whole hearted co-operation, provided excellent Lab facility, continuous monitoring, constant encouragement and unfailing inspiration.

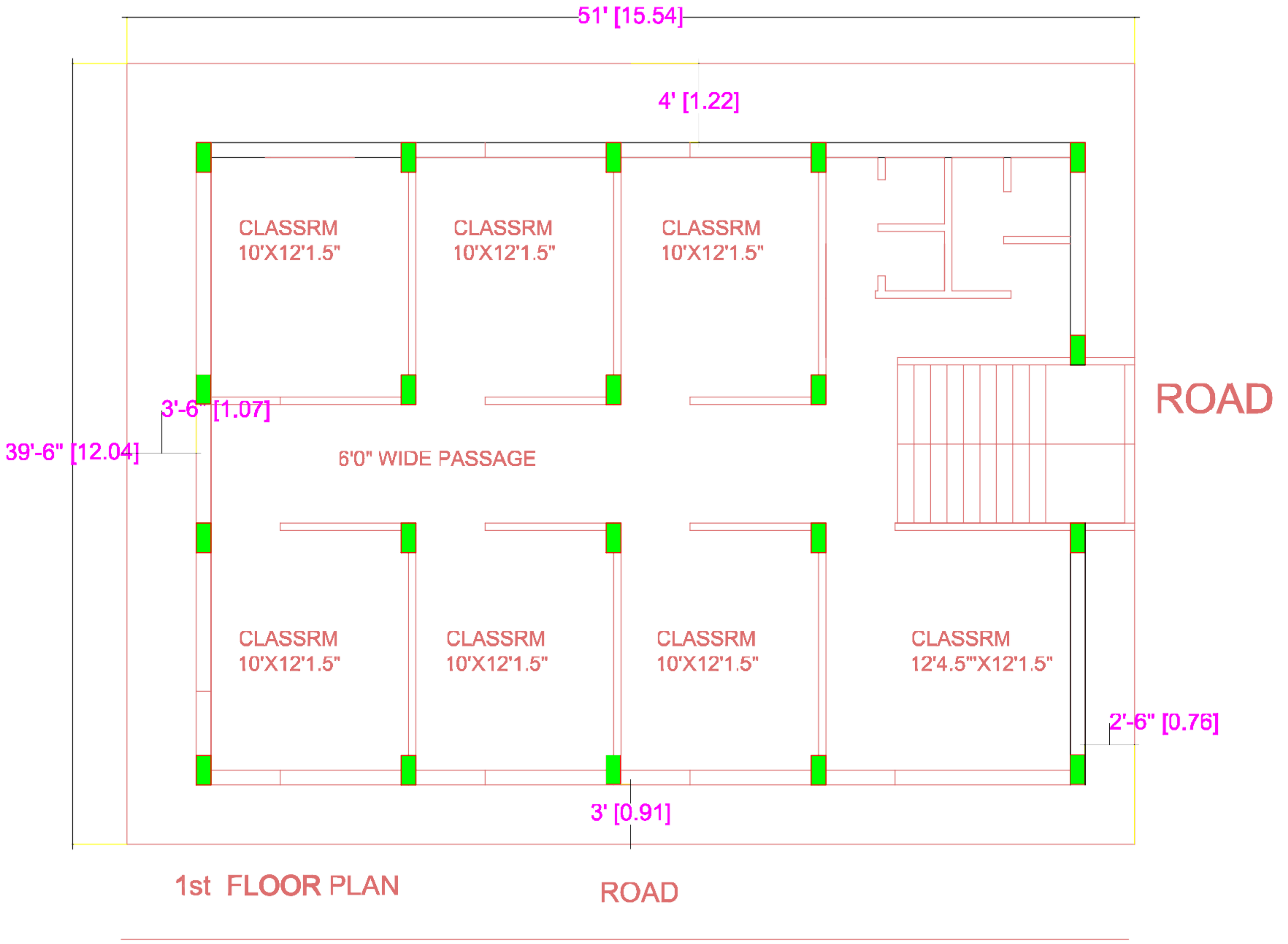
I also thank our guide **G.L.POORNIMA**, Asst. Professor of Civil Engineering Department. I am extremely grateful and indebted to him for his sincere support and encouragement extended for us.

I take this opportunity to record my sincere thanks to **G.L.POORNIMA ,** Asst. Professor & Project Coordinator in the department of Civil Engineering GNITC for giving timely suggestions during the progress of the project work.

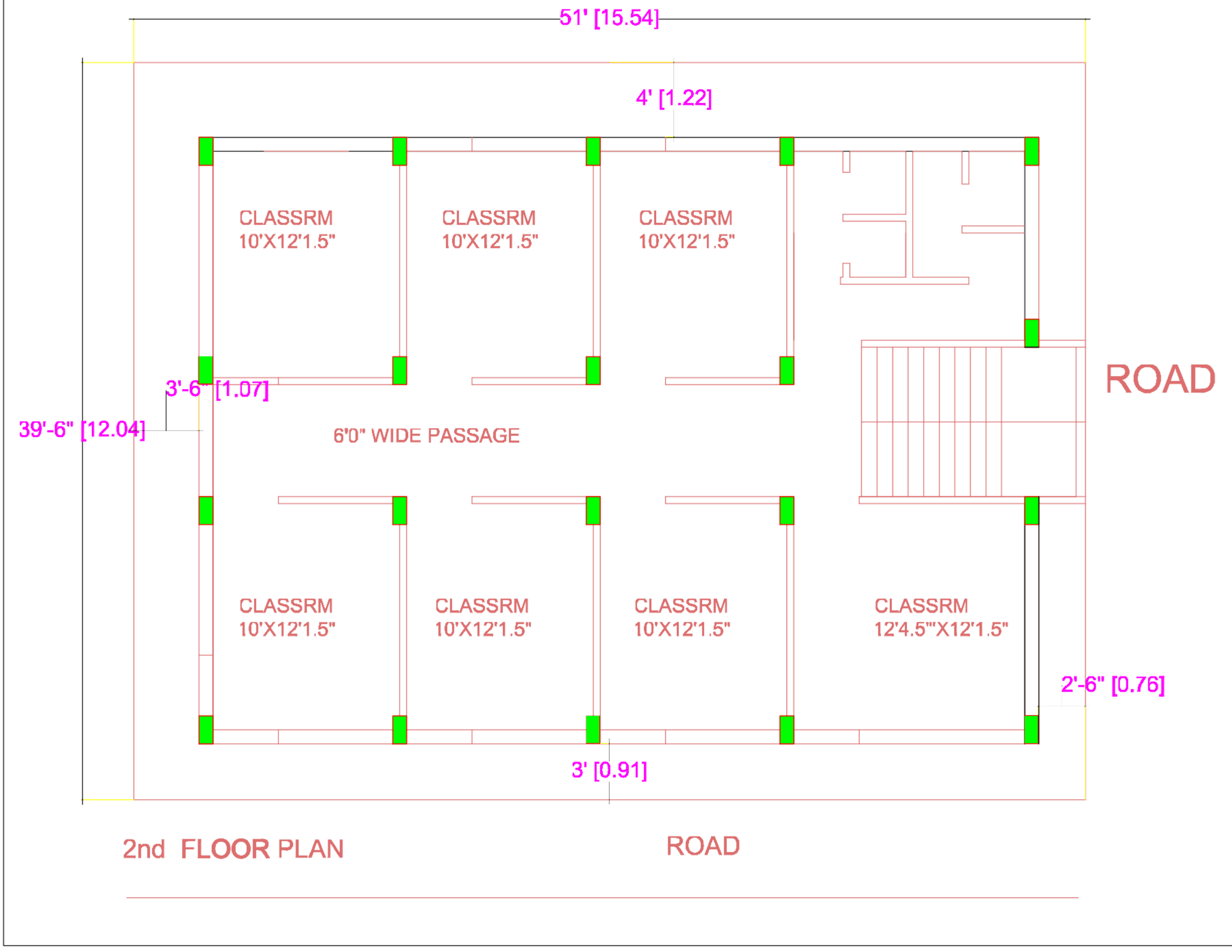
The satisfaction and euphoria that accompany the successful completion of task would be great but in complete with the mention of the people made it possible with here constant guidance and encouragement crowns all the efforts with the success. In this context, I would like thank all the staff members teaching and non-teaching, who have extended their timely help and eased my task.

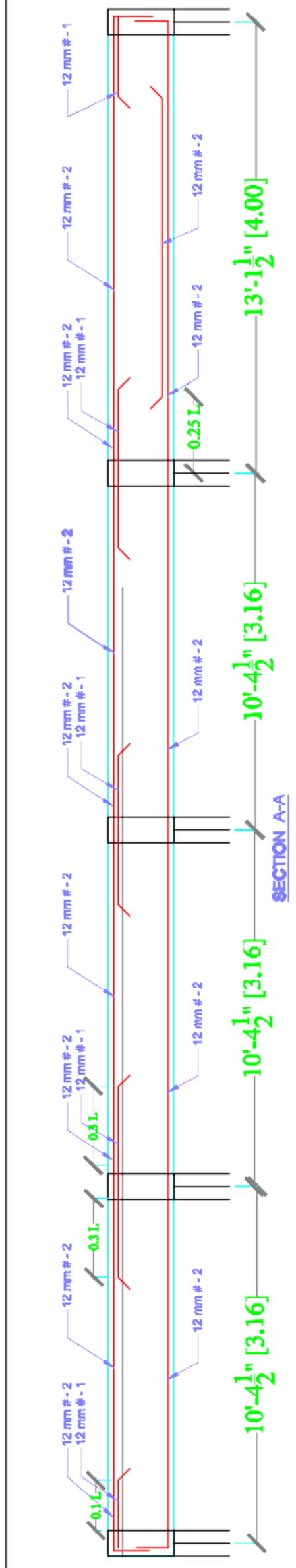
Finally, I would like to thank our parents who have always encouraged us to do the best

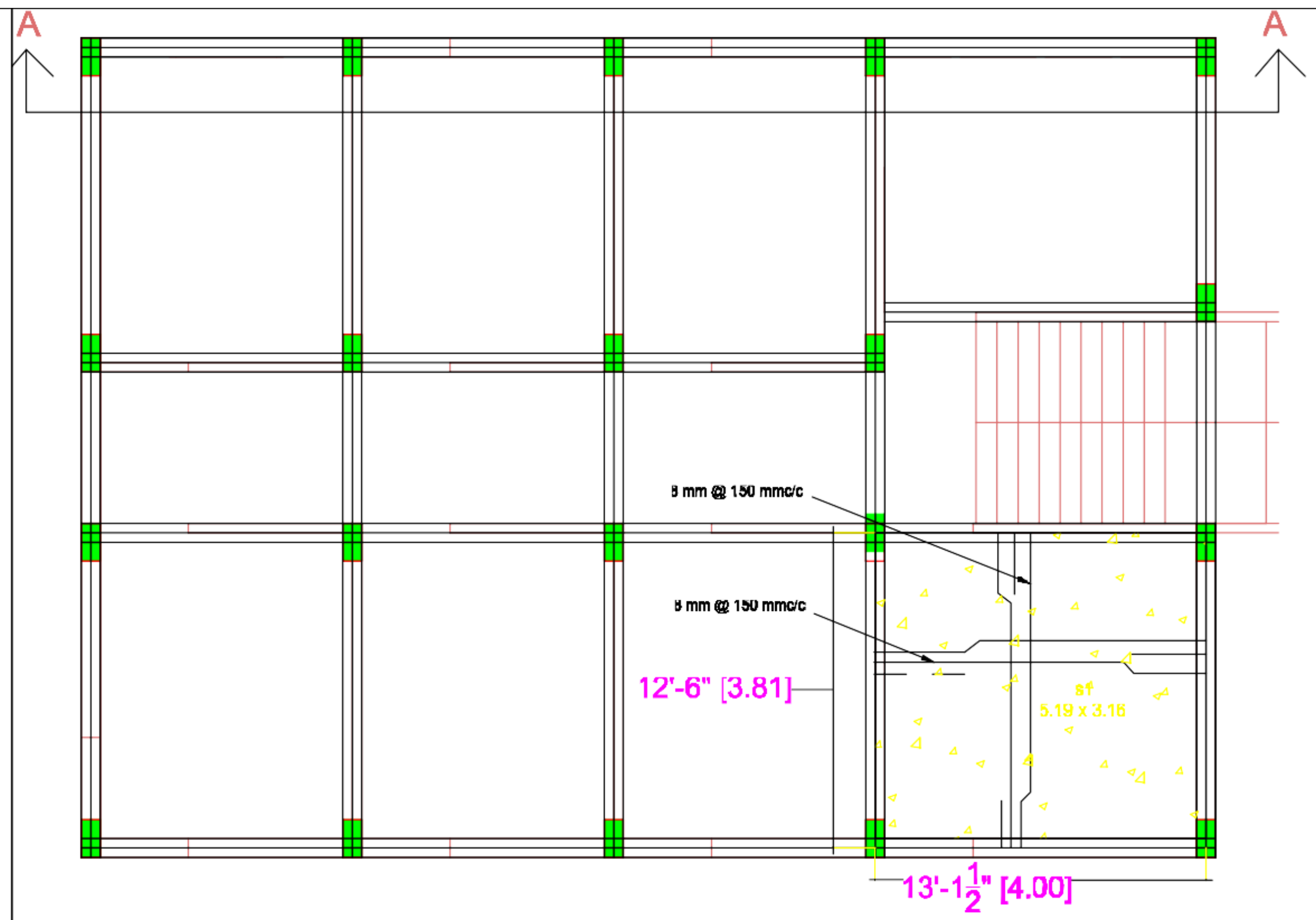

51' [15.54]
4' [1.22]
STAFF RM
10'X12'1.5"
3'-6" [1.07]
39'-6" [12.04]
ROAD
OPEN AREA
OFFICE
12'4.5"X12'1.5"
2'-6" [0.76]
3' [0.91]
N
GROUND FLOOR PLAN
ROAD



1st FLOOR PLAN


51' [15.54]
4' [1.22]
CLASSRM
10'X12'1.5"
CLASSRM
10'X12'1.5"
CLASSRM
10'X12'1.5"
ROAD
3'-6" [1.07]
39'-6" [12.04]
6'0" WIDE PASSAGE
CLASSRM
10'X12'1.5"
CLASSRM
10'X12'1.5"
CLASSRM
10'X12'1.5"
CLASSRM
12'4.5"'X12'1.5"
2'-6" [0.76]
3' [0.91]
2nd FLOOR PLAN
ROAD





SECTION A-A

NOTE :

SPACING OF STIRRUPS [8MM]
PROVIDE 2 LEG STIRRUPS 8 MM DIA@ 80 MM @C/C SPACING
THE BEAM, UNLESS SPECIFIED OTHERWISE

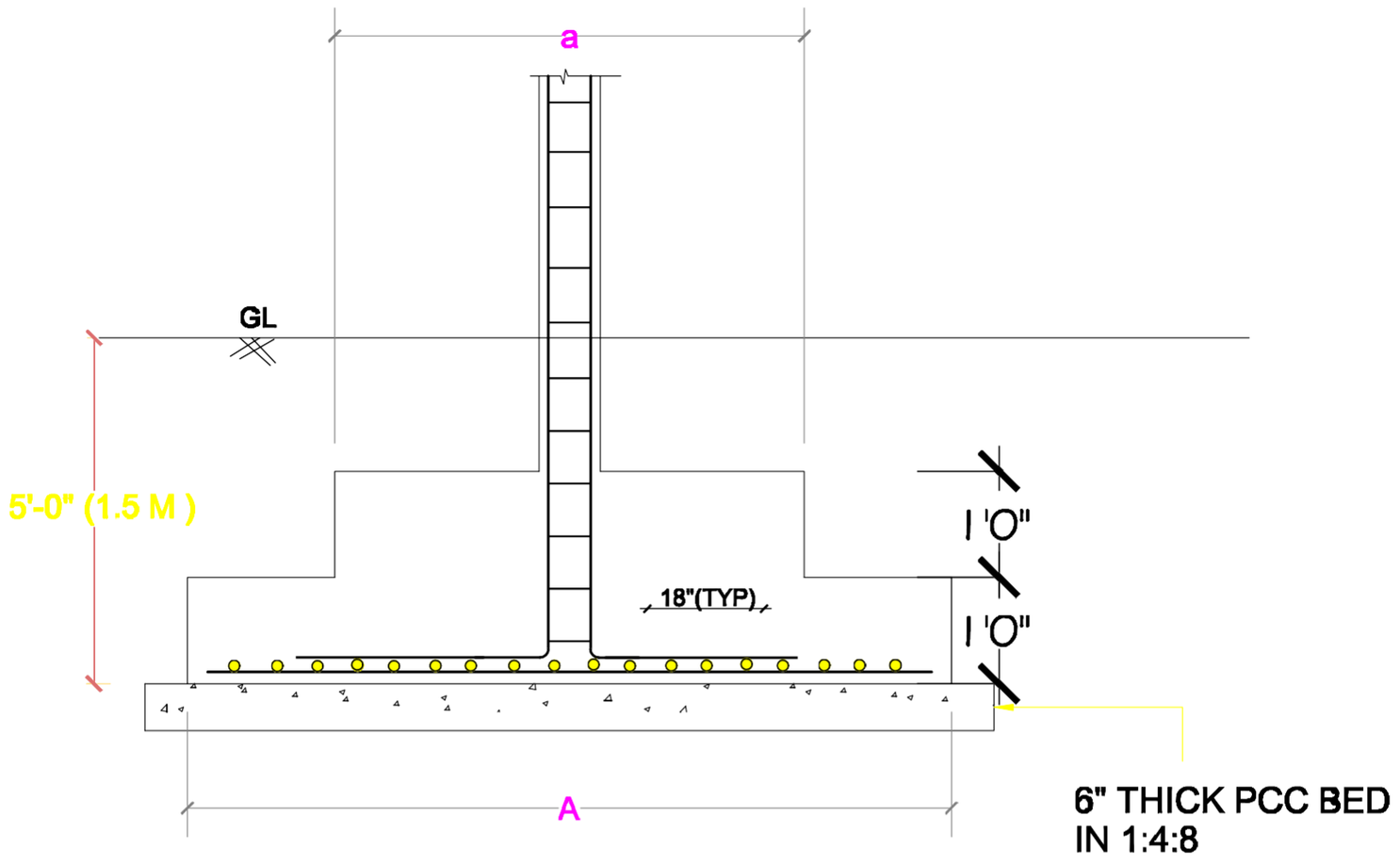
Notes:

1. USE M20 MIX & FE415 STEEL FOR MAIN AND DISTRIBUTION
2. Extra bars at continuous edj 0.25L or Ld
   (Whichever is greater) on either side of the beam
3. Extrabar at discontinuous edj 0.15L
4. Extrabar at Cantilever 0.5L or Ld
5. Nominal Cover to the Reinforcement is 25mm
6. Provide 2 leg stirrups 8 mm dia@ 140 mm @c/c spacing

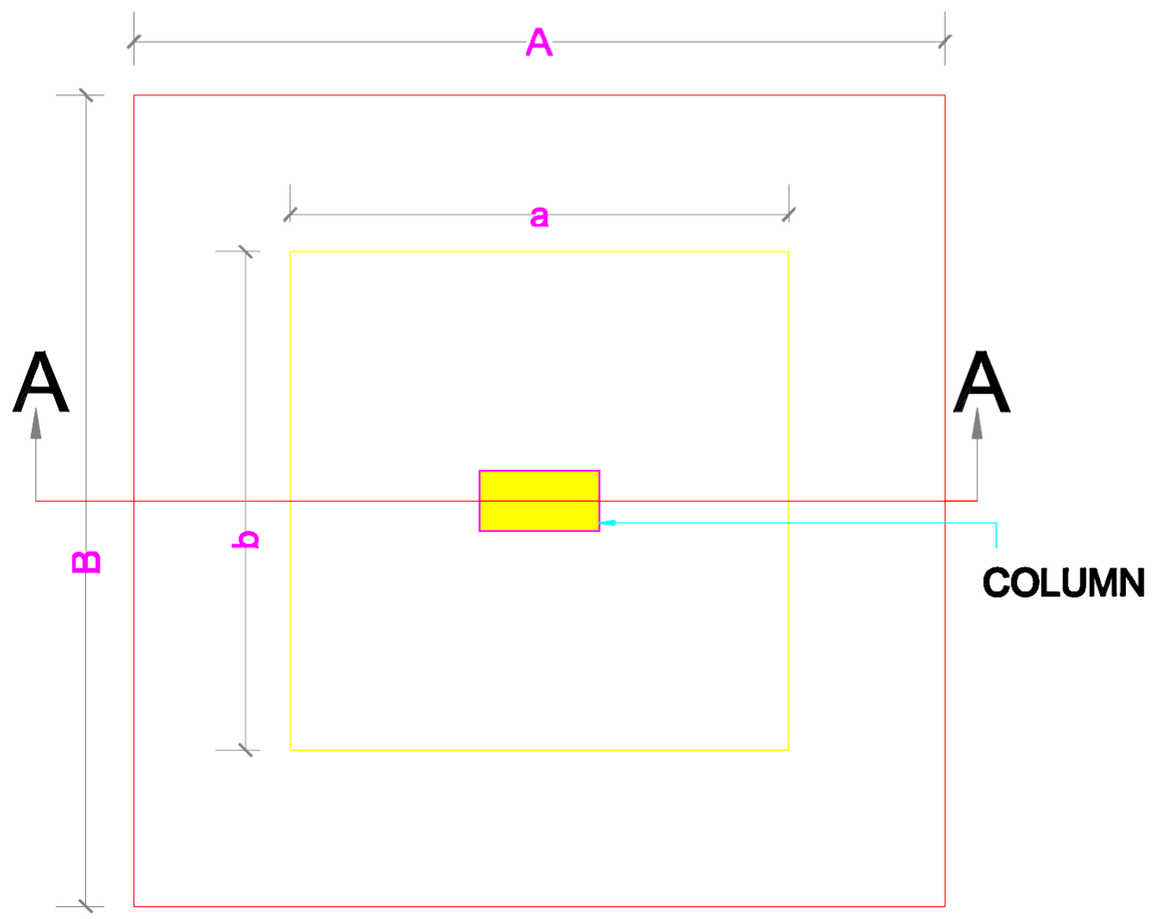
SLAB NOTES:

1.SLAB THICKNESS = 5". (unless specified otherwise)
2. Use M20 concrete mix for slab only
3. Extrabars at continuous edj 0.3L on either side of the beam
4. Crank alternatebar at .25L on either side of the beam
5. Extrabar at discontinuous edj 0.1L
6. Provide Distribution steel 8mm @ 10" c/c wherever require

BEAM DETAILES



TYPICAL FOOTING DETAILS



PLAN

FOOTING DETAILS

STEPPED FOOTİNG DETAILS

FOOTİNG ID	A	B	D1	a	b	D2	REINFORCEMENT
F1	5'0"	5'0"	5'0"				12 mm @ 111 mm c/c Both ways Bottom

NOTES:

1. FALLOW ARCHITECTURAL DRAWING FOR LIFT PIT DETAILS.

NOTES:

1. USE M20 CONCRETE FOR FOOTINGS IS:456-2000.
2. REINFORMENT SHALL BE HIGH STRENGHT DEFORMED BARS OF GRADE Fe415 CONFORMING TO IS:1786-1985.
3. PROVIDE 50MM CLEAR COVER FOR FOOTINGS AND 40MM FOR COLUMNS.
4. NOT MORETHAN HALF THE COLUMN BARS SHALL BE LAPPED AT SECTION.
5. ALL LAPS MUST BE STAGGERED AND LAP LENGTH MUST BE Ld.
6. IF BARS OF TWO DIFFERENT DIA USED IN A COLUMN, HIGHER DIA SHOULD BE PLACED AT THE CORNERS.
7. SBC OF SOIL 200 KN/M^2.
8. REFER ARCHITECTURAL DRAWING FOR CENTERLINE.

NOTE :

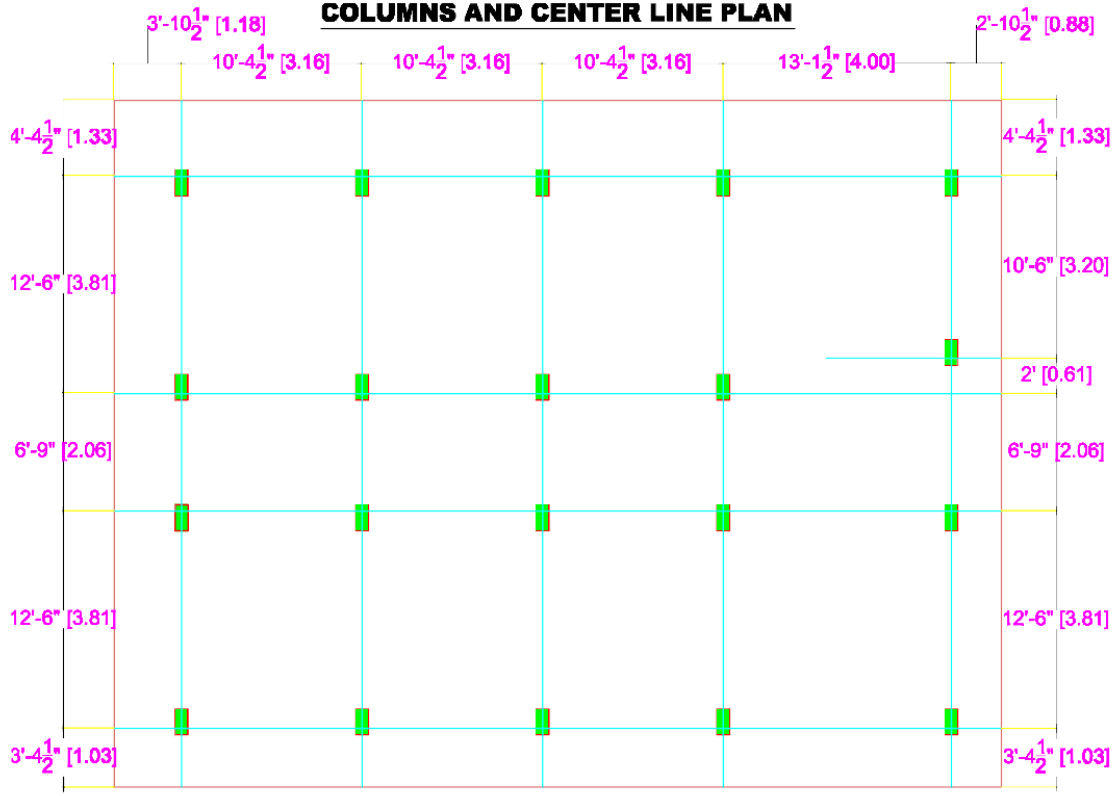
SPACING OF STIRRUPS [8MM]
PROVIDE 2 LEG STIRRUPS 8 MM DIA@ 80 MM @C/C SPACING
THE BEAM, UNLESS SPECIFIED OTHERWISE

Notes:

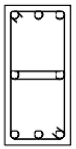
1. USE M20 MIX & FE415 STEEL FOR MAIN AND DISTRIBUTION
2. Extra bars at continuous edj 0.25L or Ld
   (Whichever is greater) on either side of the beam
3. Extrabar at discontinuous edj 0.15L
4. Extrabar at Cantilever 0.5L or Ld
5. Nominal Cover to the Reinforcement is 25mm
6. Provide 2 leg stirrups 8 mm dia@ 140 mm @c/c spacing

BEAM DETAILES

COLUMNS AND CENTER LINE PLAN



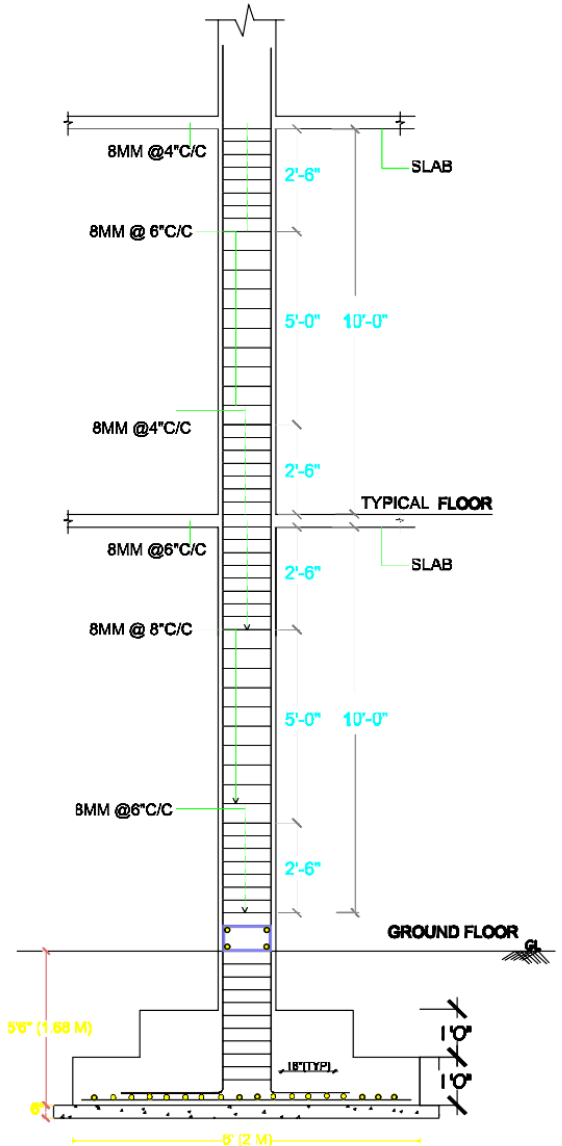
COLUMN DETAILS

COL.ID	SKETCH	SIZE/RFT	TIES
C-4A		(230 X 450) (9"X18") 12# - 8	8MM @ 5" C/C DOUBLE TIES

NOTES:

1. USE M20 CONCRETE FOR COLUMNS CONFORMING TO IS:456-2000.
2. REINFORMENT SHALL BE HIGH STRENGHT DEFORMED BARS OF GRADE MAIN REINFORCEMENT IS Fe 415& SECONDARY REINFORCEMENT IS Fe 250 CONFORMING TO IS:1786-1985.
3. PROVIDE 50MM CLEAR COVER FOR FOOTINGS AND 40MM FOR COLUMNS.
4. NOT MORETHAN HALF THE COLUMN BARS SHALL BE LAPPED AT SECTION.
5. ALL LAPS MUST BE STAGGERED AND LAP LENGTH MUST BE Ld.
6. IF BARS OF TWO DIFFERENT DIA USED IN A COLUMN, HIGHER DIA SHOULD BE PLACED AT THE CORNERS.
7. SBC OF SOIL 200 KN/M^2.
8. REFER ARCHITECTURAL DRAWING FOR CENTERLINE.

THIS STRUCTURE IS DESIGNED FOR GROUND+2 UPPER FLOORS ONLY



TYPICAL LATERAL TIES ARRANGEMENT FOR COLUMNS