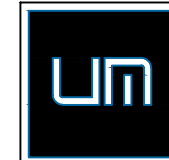


**PROJECT:-**

# **G I K HOSTEL**

## **STRUCTURAL DRAWINGS**

**STRUCTURAL CONSULTING ENGINEER**

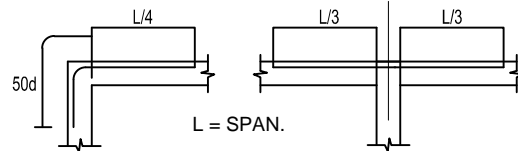


**UMAIR MAJEED  
CONSULTING ENGINEER**

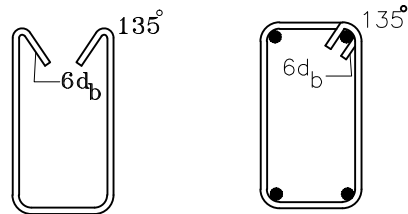
PEC REGISTRATION NO : CONSULT / 1816  
DHA REGISTRATION NO : SE - 0254  
CDA REGISTRATION NO : STRUCTURES - 220/696  
RDA REGISTRATION LTR NO: RDA / LU&BC / F - 371556  
GULBERG REGISTRATION NO : GI / STR / 039 / 2018  
Office Address: Office Address: # S-116,117,118,119 2nd Floor City  
Center Bank Road Saddar Rawalpindi.  
E- mail: umairmce@yahoo.com ; umairmce@gmail.com  
Contact # : + 92 332 5056097

## GENERAL NOTES

1. ALL STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL AND OTHER SERVICES DRAWINGS.
2. ANY DISCREPANCY IN THE CONTRACT DOCUMENTS SHALL BE REFERRED TO THE ENGINEER FOR DECISION BEFORE PROCEEDING WITH THE WORK. THE STRUCTURAL DRAWINGS TAKE PRECEDENCE OVER THE SPECIFICATIONS.
3. SETTING-OUT DIMENSIONS AND SIZES OF STRUCTURAL MEMBERS SHALL NOT BE OBTAINED BY SCALING THE STRUCTURAL DRAWINGS.
4. ANY SETTING-OUT DIMENSION SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE VERIFIED ON SITE WITH THE ARCHITECTURAL DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS.
5. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITIONS, INCLUDING AMENDMENTS, OF THE RELEVANT ACI STANDARDS (WHERE APPLICABLE).
6. WATER STOPPER ( 10" X 6MM Thick.) WITH BUBBLE SHALL BE USED AT EVERY CONSTRUCTION JOINT IN RETAINING WALL..
7. ALL DRAWING SHOULD BE READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL, ELECTRICAL, PLUMBING, HVAC AND OTHER RELEVANT DRAWINGS.
8. SLAB REINFORCEMENT STEEL SPLICES. (1) FOR BOTTOM BARS. LOCATE SPLICES OVER SUPPORTS. (2) FOR TOP BARS, LOCATE SPLICES AT MID-SPAN OR L/3 OF SPAN "L" OF LONGER SPAN .
9. PARTITION WALLS SHALL NOT BE BUILT BEFORE THE REMOVAL OF FORM WORK FOR SLAB/BEAMS.
10. ALL REINFORCEING BARS TO BE FABRICATED AS PER THE BENDING SCHEDULES PREPARED BY THE CONTRACTOR AND CHECKED BY THE ENGINEER.
11. DETAIL OF BEAM TOP BAR



12. LAPS IN BEAMS SHALL BE PROVIDED OUTSIDE THE L/3 OF SPAN FROM FACE OF SUPPORT IN BOTH TOP AND BOTTOM BARS.
13. CONSTRUCTION JOINT SHALL BE PROVIDED AT A DISTANCE L/3 FROM THE FACE OF SUPPORT .
14. FOLLOWING MINIMUM CLEAR COVER TO MAIN REINFORCING STEEL SHALL BE MAINTAINED:



GENERAL (in)  
 FOOTING = 2"  
 COLUMNS = 1 1/2"  
 SLAB = 3/4"  
 BEAM = 1 1/2"  
 WALLS = 1 1/2"

## BRICK WORK

1. BRICK WORK FOR NON LOAD BEARING WALLS SHALL BE WITH 1 : 6 CEMENT / SAND MORTAR HAVING MINIMUM COMPRESSIVE STRENGTH OF 1200 Psi.

## FOOTINGS

1. ALL FOOTING EXCAVATIONS SHALL BE CLEANED OF LOOSE MATERIAL AND WATER.
2. ALL FOUNDATION MATERIAL SHALL BE INSPECTED BY THE CONSULTING ENGINEER BEFORE ANY CONCRETE IS PLACED.
3. WHERE VERIFIED FOUNDATION MATERIAL IS FOUND LOWER THAN THE UNDERSIDE OF FOOTINGS AS DETAILED, BACKFILL THE SPACE BETWEEN FOUNDING MATERIAL AND FOOTING SOFFIT WITH LEAN CONCRETE.
4. SOIL INVESTIGATION SHOULD BE CARRIED OUT PRIOR TO IMPLEMENTATION OF STR DWGS .RESULTS OF SOIL REPORT SHOULD BE DISCUSS WITH CONSULTING ENGINEER FOR REVIEW / REVISION ACCORDINGLY.
5. FOOTING SHOULD BE LAID ON HARD AND WELL COMPACTED EARTH.
6. THE DESIGN IS IN ACCORDANCE TO THE SEISMIC ZONE II-B.
7. FOUNDATION HAS BEEN DESIGNED FOR TWO STOREYS WITH ALLOWABLE BEARING CAPACITY OF 0.7 TSF.

## REINFORCING STEEL

REINFORCING STEEL			
BAR DIA	DEVELOPMENT LENGTH (INCH) IN TENSION		
	* SLABS & WALLS	BEAMS	
		* TOP BARS	BOTTOM BARS
#3	18"	18"	18"
#4	24"	24"	24"
#5	30"	30"	30"
#6	36"	36"	36"
#7	-	42"	42"
#8	-	47"	47"

\* IF HOR. REINFORCEMENT SO PLACED THAT MORE THAN 12" (300) OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH MULTYPLY THE ABOVE LENGTH BY 1.30

## CONCRETE

1. CONSTRUCTION JOINTS OR POUR BREAKS, WHERE NOT SHOWN ON PLANS OR DETAILS, SHALL BE LOCATED AND FORMED TO THE APPROVAL OF THE ENGINEER.
2. ALL REINFORCED CONCRETE SHALL HAVE A MINIMUM 28 DAYS CYLINDER STRENGTH OF 3000psi
3. CONCRETE SHALL BE CONSOLIDATED BY VIBRATION. CURING OF ALL CONCRETE SURFACES SHALL BE DONE AS PER SPECIFICATIONS.
4. BRICK WORK SHALL NOT BE ERECTED ON CONCRETE SLABS OR BEAMS UNTIL FORMWORK SUPPORTING THE SAME HAS BEEN REMOVED.
5. ALL OPENINGS FOR PIPING SHALL BE FORMED IN POSITION BEFORE CASTING CONCRETE.
6. ALL NON-LOAD BEARING WALLS SHALL BE KEPT CLEAR OF THE UNDERSIDE OF SLABS AND BEAMS BY 3/4".
7. WATER STOPPER ( 10" X 6MM Thick.) WITH BUBBLE SHALL BE USED AT EVERY CONSTRUCTION JOINT IN RETAINING WALL.


## REINFORCEMENT

1. ALL REINFORCEMENT SHALL BE DEFORMED BARS CONFORMING TO BS4461/4449 OR ASTM A 615 WITH A MINIMUM CHARACTERISTIC STRENGTH OF 60,000psi EXCEPT SLABS, BEAM STIRRUPS AND COLUMN TIES WHERE IT SHOULD BE 40,000psi .ALL REINFORCEMENT TO BE FIRMLY SUPPORTED ON APPROVED CHAIRS GENERALLY AT NOT GREATER THAN 2'-0" CENTRES BOTHWAYS. BARS TO BE TIED AT ALTERNATE INTERSECTIONS. ONLY APPROVED BAR CHAIRS/SPACERS WILL BE ACCEPTABLE, NO MORTAR BLOCKS ARE PERMITTED.
2. CLEAR COVER FOR CONCERT REINFORCEMENT SHALL BE AS PER TABLE # I.
3. STANDARD HOOKS FOR REINFORCEMENT SHOULD BE FOLLOWED AS PER TABLE # 2 & 3.
4.  $F_y \leq F_Y + 18000 \text{ PSI}$ .
5.  $F_u \geq 1.25 F_y$ .

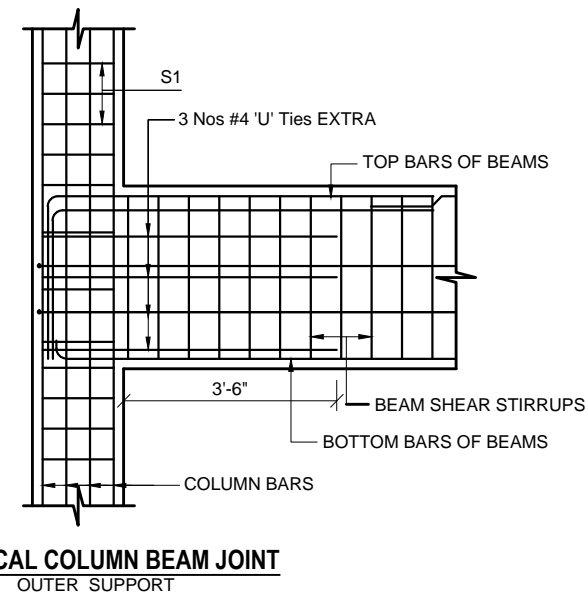
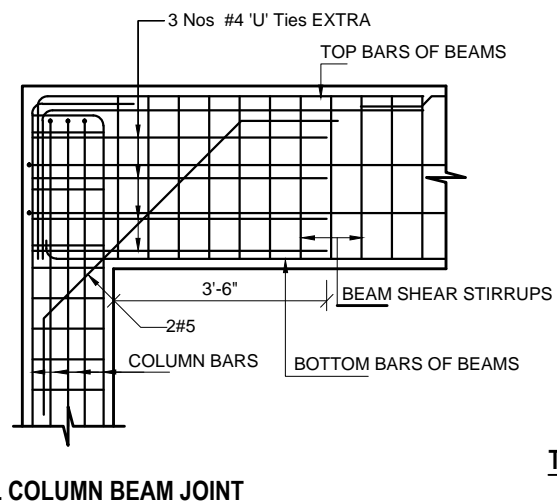
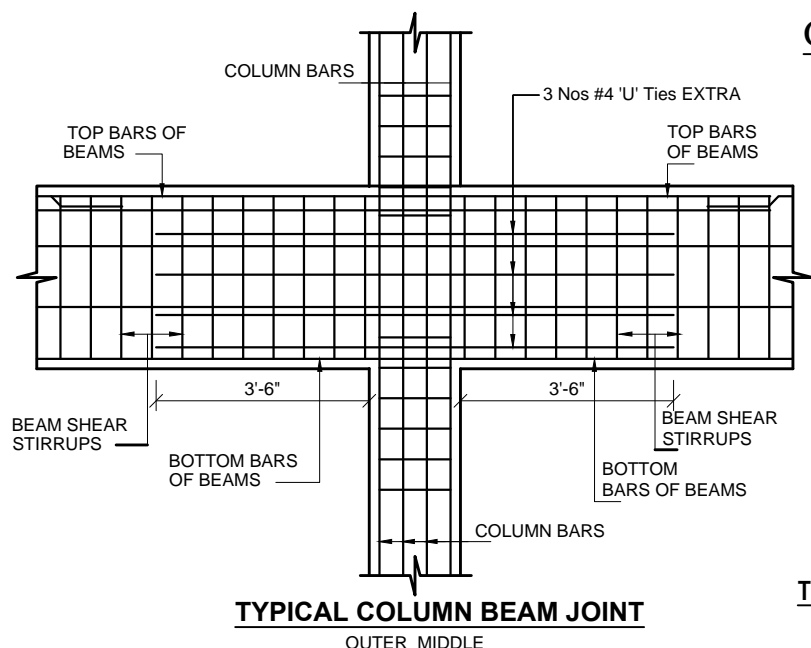
## FORMWORK REMOVAL AND SHORING

1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE DESIGN, CONSTRUCTION AND SAFETY OF THE FORMWORK AND SHORING.
2. NO CONSTRUCTION LOAD EXCEEDING THE CONSTRUCTION OF SUPERIMPOSED DEAD LOAD PLUS SPECIFIED LIVE LOAD SHALL BE SUPPORTED DN ANY UNSHORED PORTION OF THE STRUCTURE UNDER CONSTRUCTION, UNLESS ANALYSIS INDICATES ADEQUATE STRENGTH TO SUPPORT SUCH ADDITIONAL LOADS.
3. REMOVAL OF SHUTTERING AS FOLLOWS.

S.NO.	REMOVAL	COLD WEATHER NO.OF DAYS	NORMAL WEATHER NO.OF DAYS
1-	BEAMS SIDES COLUMNS (UNLOADED)	4	2
2-	SLAB SOFFITS	15	10
3-	BEAMS SOFFITS	21	14

PROJECT	SHEET TITLE	STRUCTURAL CONSULTING ENGINEER	CHECKED BY	DESIGN BY	SCALE	STAMP:
G I K HOSTEL	GENERAL NOTES	 <b>UMAIR MAJEED CONSULTING ENGINEER</b> Office Address: # S-116,117,118,119 2nd Floor City Center Bank Road Saddar Rawalpindi. E-mail: umairmce@yahoo.com ; umairmce@gmail.com Contact #: + 92 332 5056097	ENGR. M.UMAIR MAJEED	ENGR. M.UMAIR MAJEED	N.T.S	
			DRAWN BY SAFI	DATE 26-Apr-23	DRAWING ID S-00	

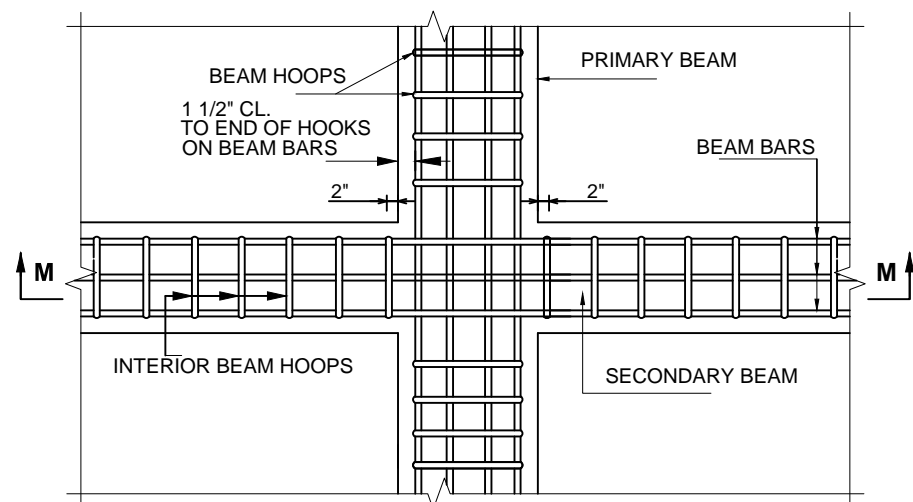
**GENERAL DETAILS**



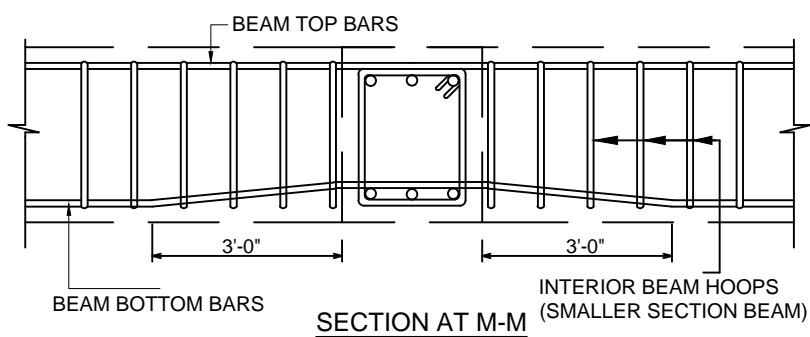
**TYPICAL COLUMN BEAM JOINT**  
OUTER MIDDLE

**TYPICAL COLUMN BEAM JOINT**

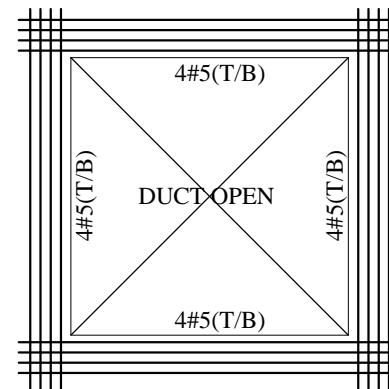
**TYPICAL COLUMN BEAM JOINT**  
OUTER SUPPORT



**PLAN OF BEAM TO BEAM DETAIL**

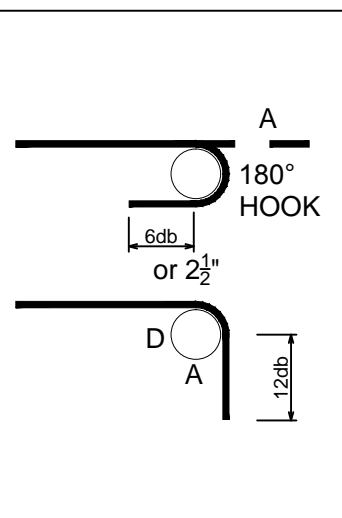


**SECTION AT M-M**



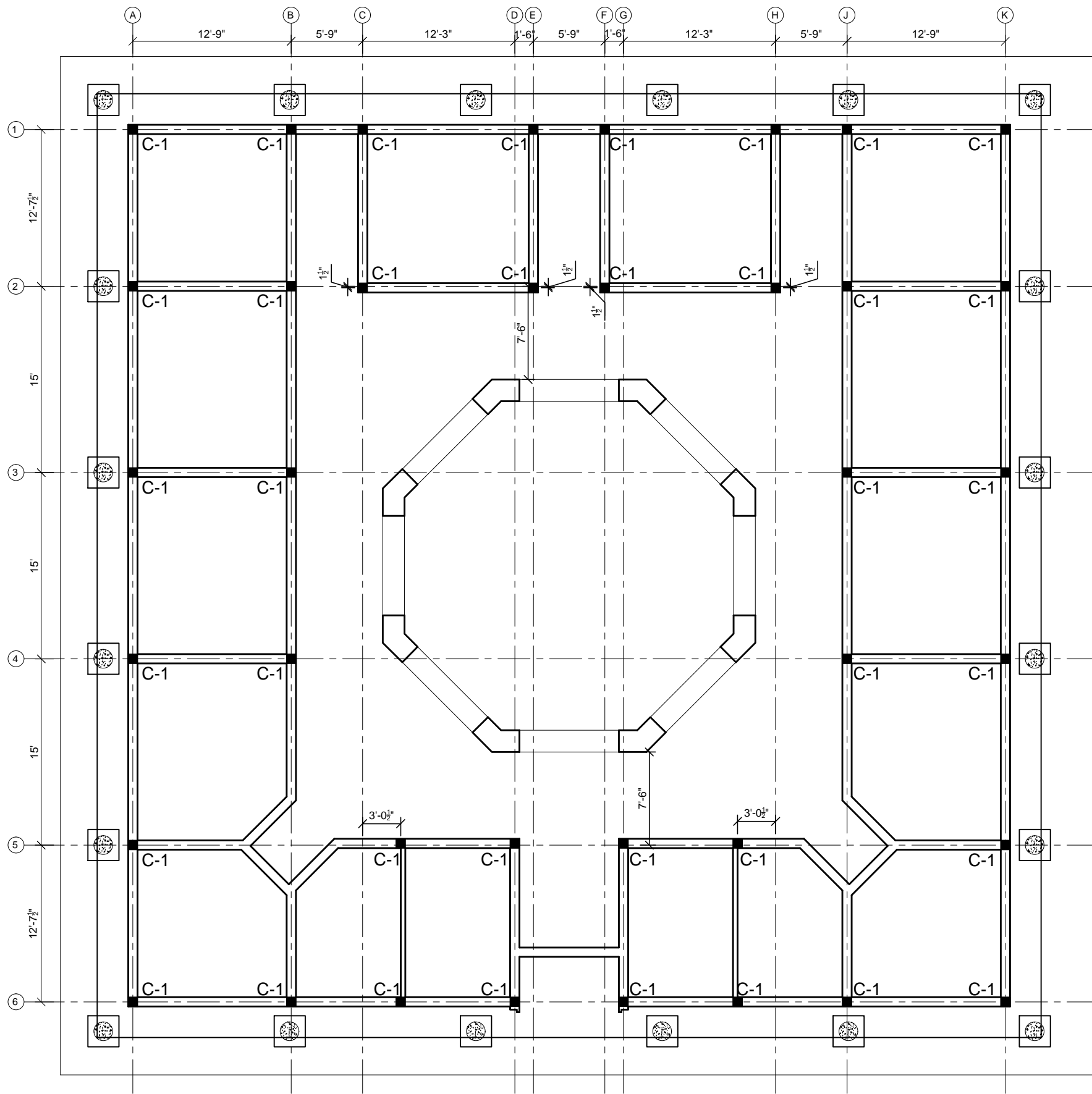
**TYP. DUCT OPENING DETAIL**

BAR DIA	HOOKS				
	180°			90°	
	A	J	D	A	D
#3	7"	2 <sup>3</sup> / <sub>4</sub> "	2 <sup>1</sup> / <sub>4</sub> "	7"	2 <sup>1</sup> / <sub>4</sub> "
#4	8"	3 <sup>1</sup> / <sub>4</sub> "	3"	8"	3"
#5	9 <sup>1</sup> / <sub>4</sub> "	4 <sup>1</sup> / <sub>2</sub> "	3 <sup>1</sup> / <sub>4</sub> "	10 <sup>1</sup> / <sub>2</sub> "	3 <sup>1</sup> / <sub>4</sub> "
#6	12"	5 <sup>1</sup> / <sub>2</sub> "	4 <sup>1</sup> / <sub>2</sub> "	13 <sup>1</sup> / <sub>2</sub> "	4 <sup>1</sup> / <sub>2</sub> "
#7	13"	6 <sup>1</sup> / <sub>4</sub> "	5 <sup>1</sup> / <sub>4</sub> "	14 <sup>3</sup> / <sub>4</sub> "	5 <sup>1</sup> / <sub>4</sub> "
#8	15"	7"	6"	18"	6"

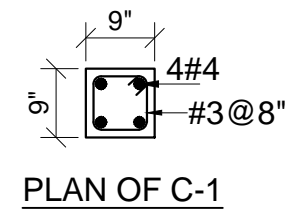


BAR DIA	SPLICE LAP LENGTH (INCHES)		
	COLUMNS	BEAMS / SLABS	
		TOP BARS	BOTTOM BARS
#3	-	18"	18"
#4	33"	33"	33"
#5	39"	39"	39"
#6	48"	48"	48"
#7	54"	54"	54"
#8	61"	61"	61"

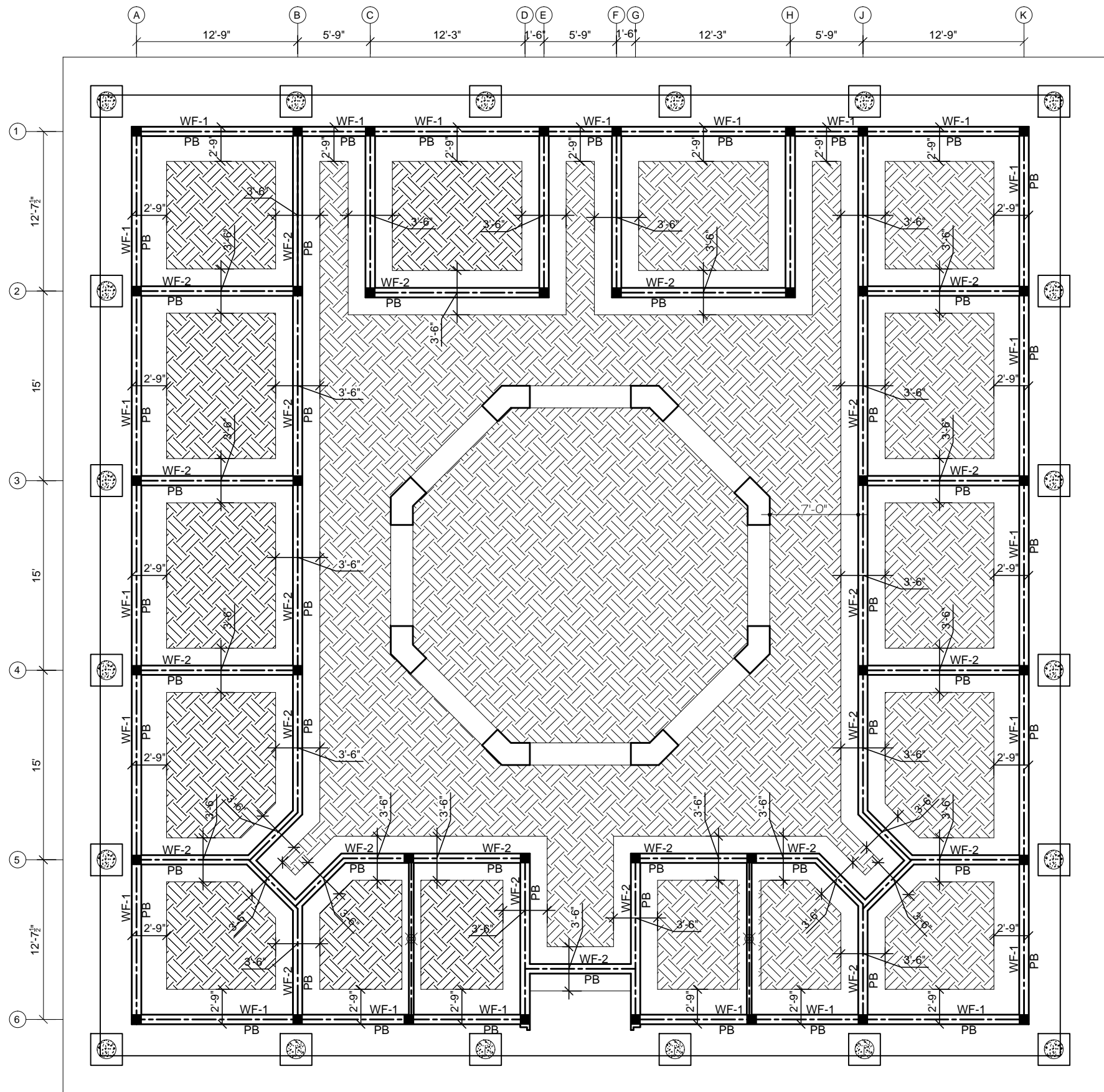
<b>PROJECT</b> G I K HOSTEL	<b>SHEET TITLE</b> GENERAL NOTES	<b>STRUCTURAL CONSULTING ENGINEER</b> <b>UMAIR MAJEED CONSULTING ENGINEER</b> <small>Office Address: # S-116,117,118,119 2nd Floor City Center Bank Road Saddar Rawalpindi. E-mail: umairmce@yahoo.com ; umairmce@gmail.com Contact #: + 92 332 5056097</small>	<b>CHECKED BY</b> ENGR. M.UMAIR MAJEED  <b>DRAWN BY</b> SAFI	<b>DESIGN BY</b> ENGR. M.UMAIR MAJEED  <b>DATE</b> 26-Apr-23	<b>SCALE</b> N.T.S  <b>DRAWING ID</b> S-01	<b>STAMP:</b>
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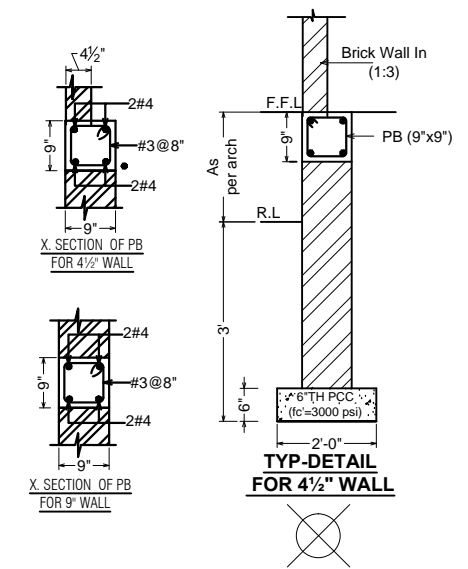
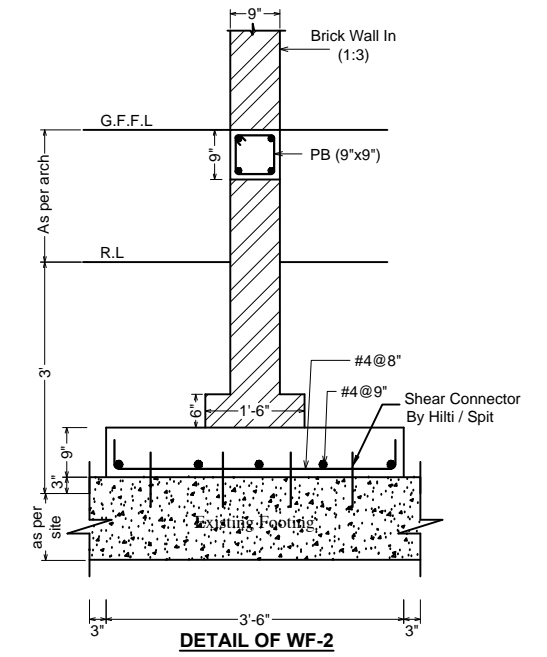
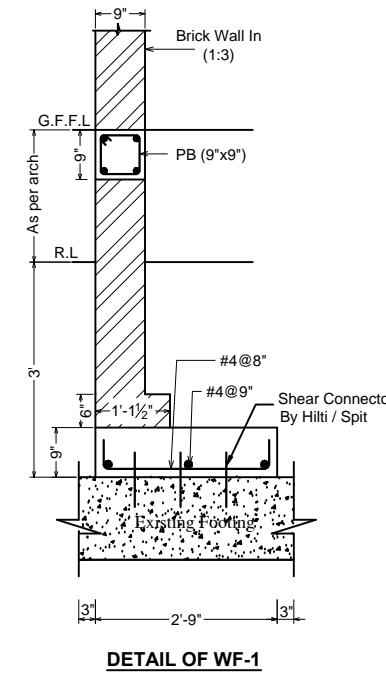
**WALL & COLUMN LAYOUT PLAN**




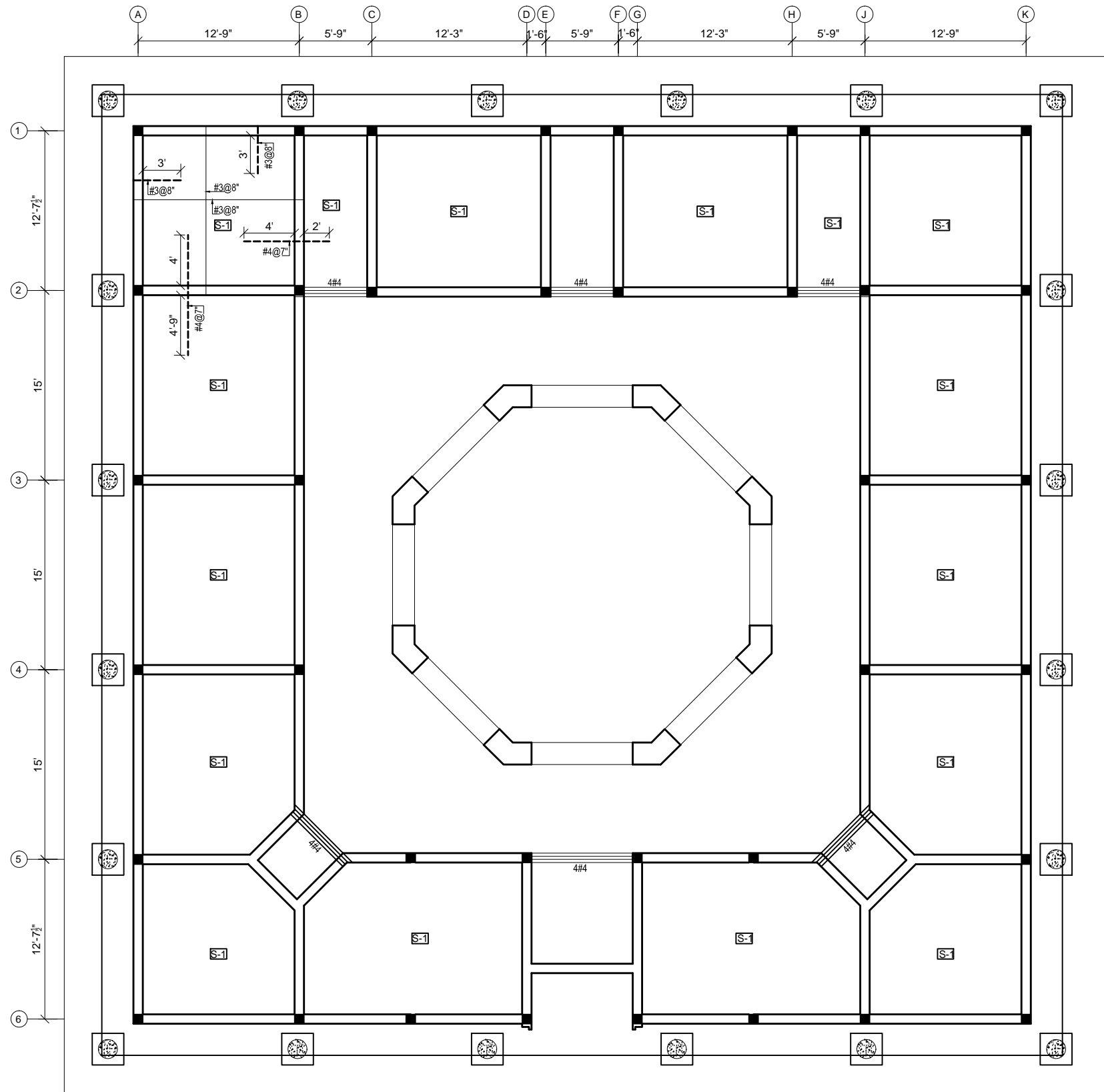
PROJECT <b>G I K HOSTEL</b>	SHEET TITLE <b>WALL &amp; COLUMN LAYOUT PLAN</b>	STRUCTURAL CONSULTING ENGINEER <b>UM</b> <b>UMAIR MAJEED CONSULTING ENGINEER</b> Office Address: # S-116,117,118,119 2nd Floor City Center Bank Road Saddar Rawalpindi. E-mail: umairmce@yahoo.com ; umairmce@gmail.com Contact #: + 92 332 5056097	CHECKED BY ENGR. M.UMAIR MAJEED	DESIGN BY ENGR. M.UMAIR MAJEED	SCALE N.T.S	STAMP:
			DRAWN BY SAFI	DATE 26-Apr-23	DRAWING ID S-02	



**FOOTING LAYOUT PLAN OF GROUND FLOOR**



PROJECT <b>G I K HOSTEL</b>	SHEET TITLE <b>FOUNDATION LAYOUT PLAN</b>	STRUCTURAL CONSULTING ENGINEER  <b>UMAIR MAJEED CONSULTING ENGINEER</b> Office Address: # S-116,117,118,119 2nd Floor City Center Bank Road Saddar Rawalpindi. E-mail: umairmce@yahoo.com ; umairmce@gmail.com Contact #: + 92 332 5056097	CHECKED BY ENGR. M.UMAIR MAJEED	DESIGN BY ENGR. M.UMAIR MAJEED	SCALE N.T.S	STAMP:
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**GROUND FLOOR SLAB REINFORCEMENT PLAN**  
**SLAB THICKNESS = 6"**

- A. NON-LOAD BEARING WALLS SHALL BE STOPPED ATLEAST 12" BELOW SOFFIT OF BEAMS/SLABS AND COMPLETED AFTER COMPLETION OF STRUCTURE.
- B. PROVIDE #3@12"c/c AS BINDING BARS FOR TOP REINFORCEMENT

TYPICAL DETAIL OF RCC LINTELS						
S NO	SPAN	DEPTH (a)	MAIN BARS	BINDING BARS	STIRRUPS	4.5" / 9" TH (b)
1	Upto 4'-0"	9"	2 # 4	2 # 3	# 3 @ 8"	↑varies↑ 9"
2	6'-0"	9"	3 # 4	2 # 4	# 3 @ 8"	↑varies↑ 9"
3	8'-0"	9"	2 # 6	2 # 4	# 3 @ 8"	↑varies↑ 9"
4	12'-0"	15"	2 # 6	3 # 4	# 3 @ 8"	↑varies↑ 15"

NOTE: PROVIDE LINTEL BAND ON ALL WALLS AT LINTEL LEVEL TROUGHOUT AS PER SECTIONS PROVIDED ABOVE FOR RESPECTIVE SPANS.

PROJECT <b>G I K HOSTEL</b>	SHEET TITLE <b>GROUND FLOOR SLAB REINFORCEMENT AND BEAM FRAMING PLAN</b>	STRUCTURAL CONSULTING ENGINEER  <b>UMAIR MAJEED CONSULTING ENGINEER</b> Office Address: # S-116,117,118,119 2nd Floor City Center Bank Road Saddar Rawalpindi. E-mail: umairmce@yahoo.com ; umairmce@gmail.com Contact #: + 92 332 5056097	CHECKED BY ENGR. M.UMAIR MAJEED	DESIGN BY ENGR. M.UMAIR MAJEED	SCALE N.T.S	STAMP:
			DRAWN BY SAFI	DATE 26-Apr-23	DRAWING ID S-04	