

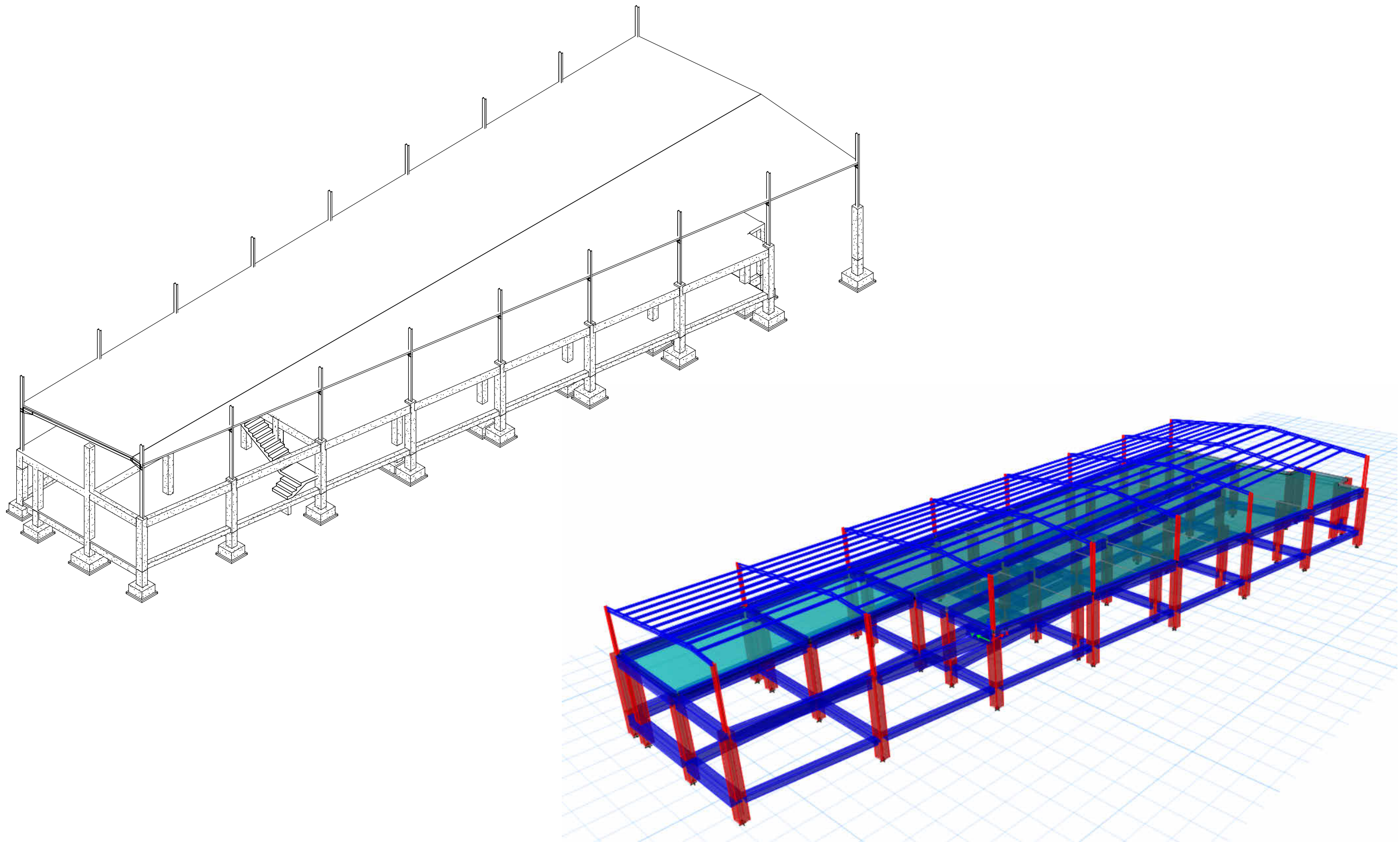
# STRUCTURAL DRAWINGS

**Palestine Hospital**

Governorate : Sana'a  
Construction of Administration Building and Warehouse.

Sheet No.	Sheet Name
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S.15	Slab on Grade Plan
S.16	Grade Beam and Slab on Grade and Chair Stone Detail
S.17	First Floor Structural Plan
S.18	Additional Top Reinforcement
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DRAWING NO.	S.02	Sheet Name:  Drawing List	Project Title:  Construction of Administration Building and Warehouse at The Palestine Hospital - Sana'a إنشاء مبنى الإدارة والمستودع في مستشفى فلسطين - صنعاء	 IMC - Sana'a Office منظمة الهيئة الطبية الدولية - مكتب صنعاء	 Republic of Yemen MINISTRY OF PUBLIC HEALTH AND POPULATION HEALTH PLANNING AND DEVELOPMENT SECTOR GENERAL ADMINISTRATION OF ENGINEERING AFFAIRS
DRAWING REVISION	V2				
DATE:	Apr. 2024				
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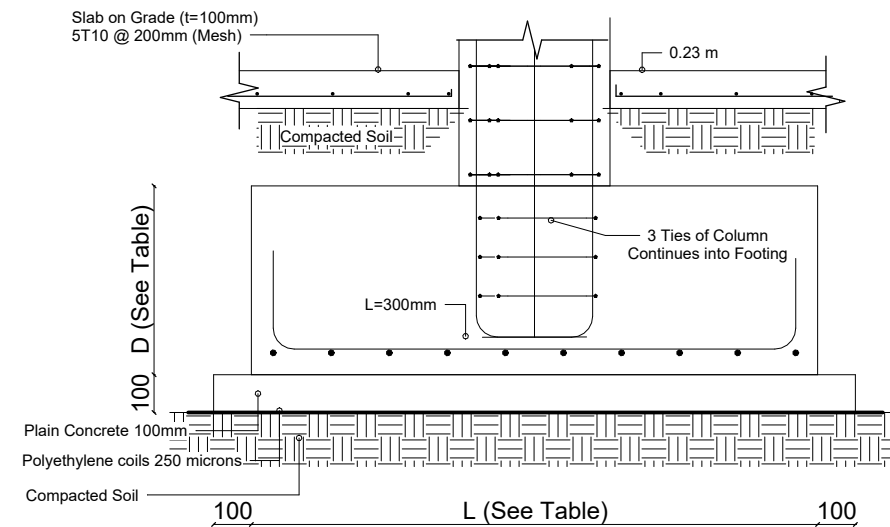


DRAWING NO.	S.03	Sheet Name:  3D View For Structural System	Project Title:  Construction of Administration Building and Warehouse at The Palestine Hospital - Sana'a  إنشاء مبنى الإدارة والمستودع في مستشفى فلسطين - صنعاء	 International Medical Corps IMC - Sana'a Office منظمة الهيئة الطبية الدولية - مكتب صنعاء	 Republic of Yemen MINISTRY OF PUBLIC HEALTH AND POPULATION HEALTH PLANNING AND DEVELOPMENT SECTOR GENERAL ADMINISTRATION OF ENGINEERING AFFAIRS
DRAWING REVISION	V2				
DATE:	Apr. 2024				
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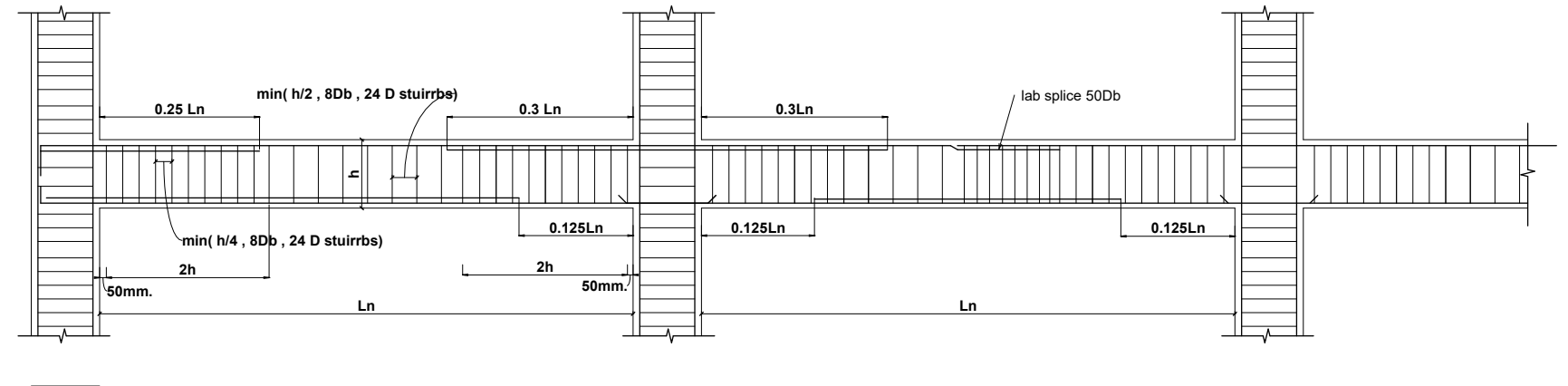
TABLE (T.01) : Minimum concrete strength fcu (MPa)			
Element	Slump (mm)	Max. agg. size (mm)	fcu (MPa)
Footings	80	20	26
Columns	80	20	26
Grade Beams	80	20	26
Slabs	80	20	26
Slabs on Grade	80	20	21
Plain Concrete	80	20	21

TABLE (T.04) : Concrete cover	
Element	Clear Cover(mm)
A) Footings	50
B) Slab on Grade	20
C) Slabs	20
D) Beams	20
E) Columns & Walls	40

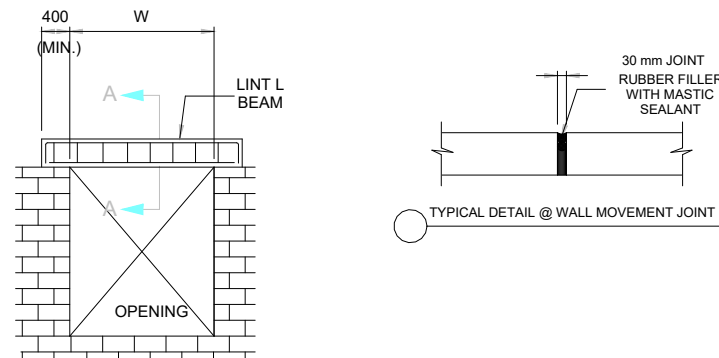
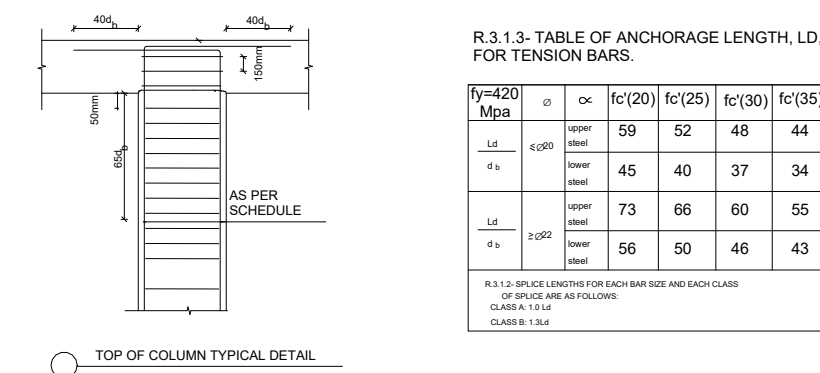
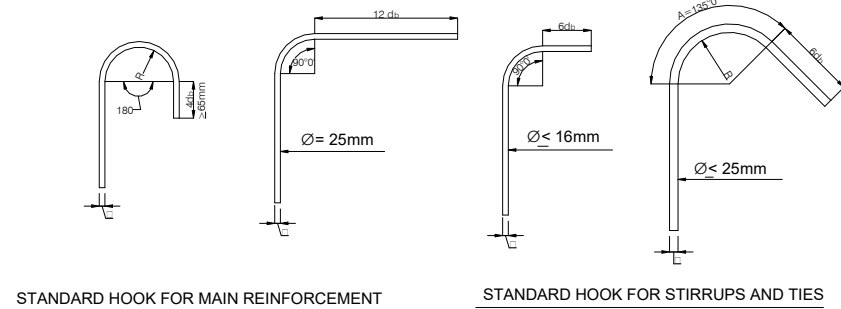
TABLE (T.02) : Minimum Yielding Strength for Steel fy (MPa)		
Elements	Reinf. Type	fy (MPa)
Columns & Walls	Longitudinal	420
	Ties	280
Beams & Slabs	Longitudinal	420
	Stirrups	280
Footings	Main	420
Slab on Grade	Main	280
Tie Beams	Main	420
	Secondary	280



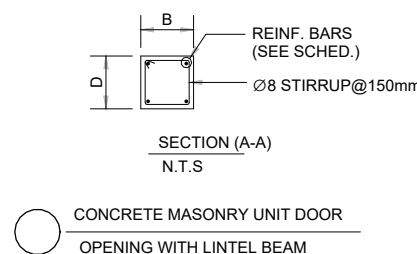
③ Typical Detailing for The Isolated Footing  
1 : 10



② Typical Reinforcement Details (Flexural Members).  
1 : 25



LINTEL BEAM SCHEDULE			
W(mm)	B(mm)	D(mm)	REINF. BARS
2000 or less	200	200	4Ø12
3000	200	250	4Ø16



STRIP LOCATION	MINIMUM PERCENT AS SECTION	WITHOUT DROP PANELS		WITH DROP PANELS	
COLUMN STRIP TOP	50 Remainder	0.30 Ln 0.20 Ln	0.30 Ln 0.20 Ln	0.33 Ln 0.20 Ln	0.33 Ln 0.20 Ln
COLUMN STRIP BOTTOM	100	15cm At least two bars shall extend into the support and anchored	0.30 Ln	0.33 Ln	15cm Splices shall be permitted in this region
MIDDLE STRIP TOP	100	0.22 Ln	0.22 Ln	0.22 Ln	0.22 Ln
MIDDLE STRIP BOTTOM	50 Remainder	15cm	Max. 0.15 Ln	15cm	Max. 0.15 Ln
		C1 Exterior support (No slab continuity)	C1 Interior support (Continuity provided)	C1 Interior support (No slab continuity)	

REINFORCEMENT OF FLAT SLAB

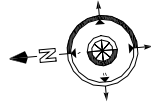
DRAWING NO.	S.05
DRAWING REVISION	V2
DATE:	Apr. 2024
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Sheet Name:  
Typical Drawings 1

Project Title:  
Construction of Administration Building and Warehouse  
at The Palestine Hospital - Sana'a  
إنشاء مبنى الإدارة والمستودع في مستشفى فلسطين - صنعاء







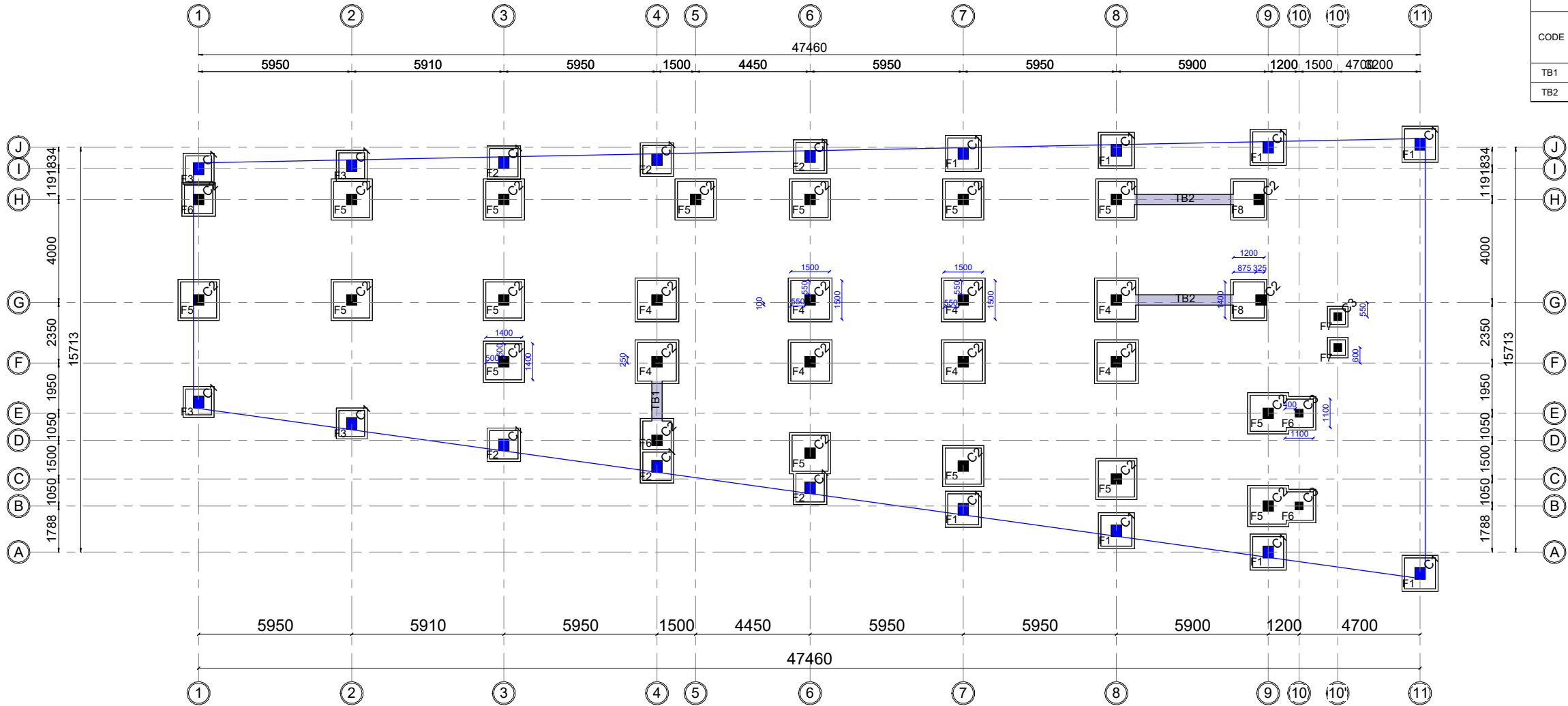
Existing Column

New Column

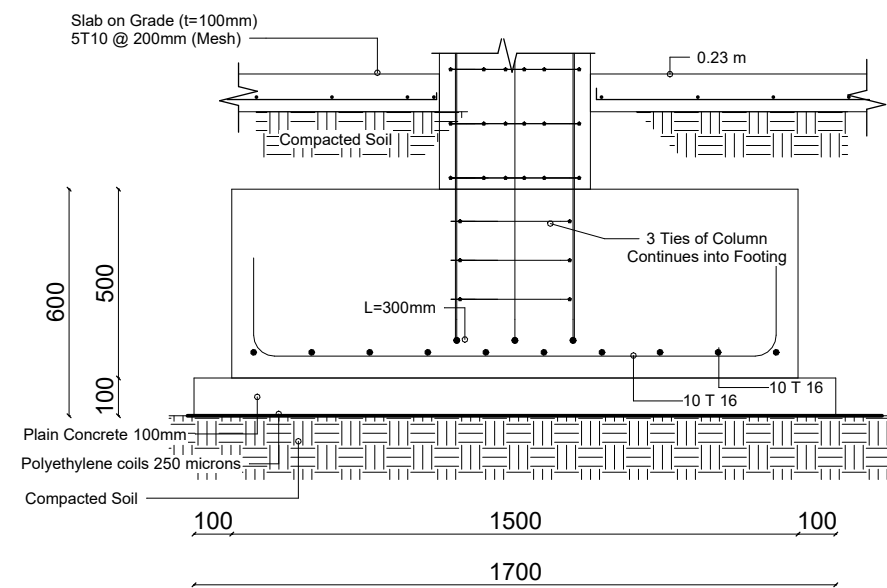
Schedule of Isolated Footings										
CODE	P.C. Dimensions (mm)			R.C. Dimensions (mm)			Bottom Reinforcement		Top Reinforcement	
	Width	Length	Height	Width	Length	Height	Long Reinforcement	Short Reinforcement	Long Reinforcement	Short Reinforcement
F1(Existing)	1400	1400	100	1200	1200	500	5 T 16 /m'	5 T 16 /m'		
F2(Existing)	1300	1300	100	1100	1100	500	5 T 16 /m'	5 T 16 /m'		
F3(Existing)	1200	1200	100	2900	2500	600	5 T 16 /m'	5 T 16 /m'		
F4	1700	1700	100	1500	1500	500	6 T 16 /m'	6 T 16 /m'		
F5	1600	1600	100	1400	1400	500	6 T 16 /m'	6 T 16 /m'		
F6	1300	1300	100	1100	1100	500	6 T 14 /m'	6 T 14 /m'		
F7	700	1500	100	500	1400	400	5 T 14 /m'	5 T 14 /m'		
F8	1300	1600	100	1200	1400	500	6 T 14 /m'	6 T 14 /m'		

Neck Columns and Ground Floor Concrete Columns Schedule						
CODE	Dimensions (mm)		Reinforcement			Number
	Width	Height	Main	Ties (mm)		
				End	Mid	
C1 (Existing)	400	450	10 T 14	2 Ø 10 @125	2 Ø 10 @150	
C2	400	400	8 T 16	2 Ø 10 @150	2 Ø 10 @170	
C3	300	300	4 T 16	1 Ø 10 @150	1 Ø 10 @150	

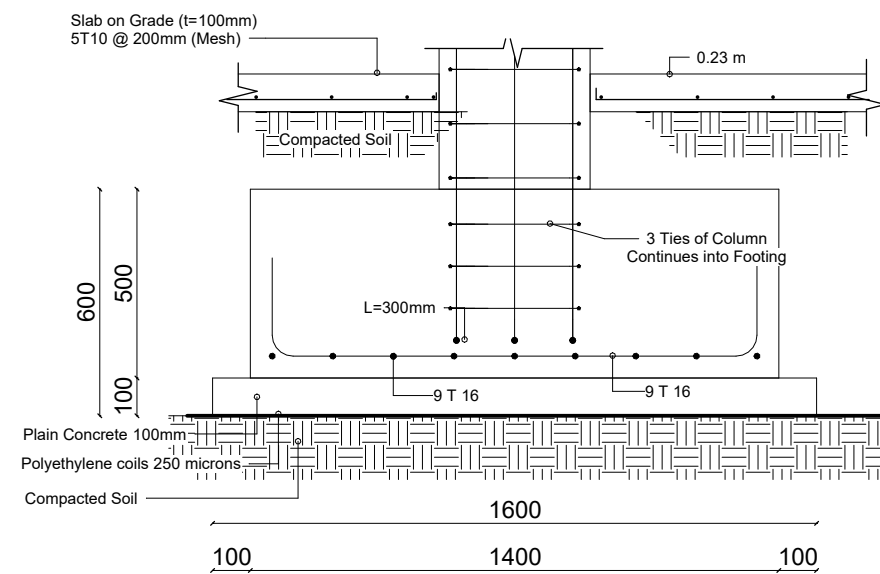
Schedule of Tie Beams						
CODE	Dimensions (mm)		Main Reinforcement			Stirrups (mm)
	Width	Height	Bottom	Bent	Top	
TB1	400	500	3 T 16	2 T 16	3 T 16	2 Ø 10 @130
TB2	400	500	3 T 16		3 T 16	2 Ø 10 @130



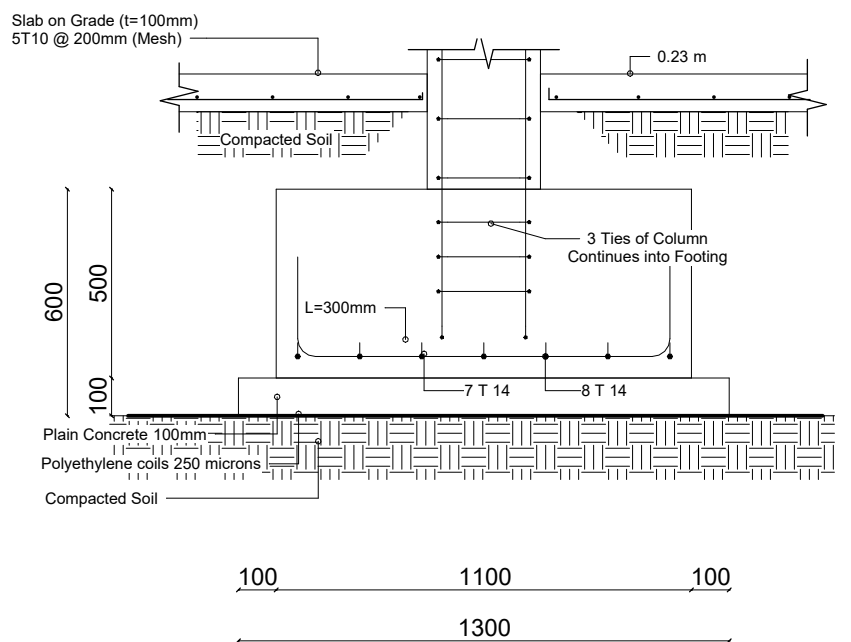
1 Footings and Tie Beams Plan  
1 : 100



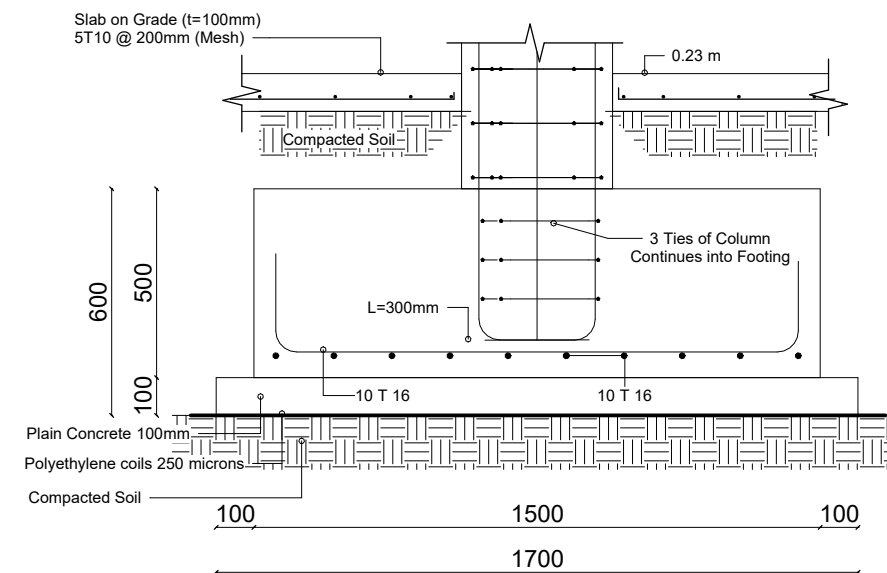
1 SEC F4-LONG  
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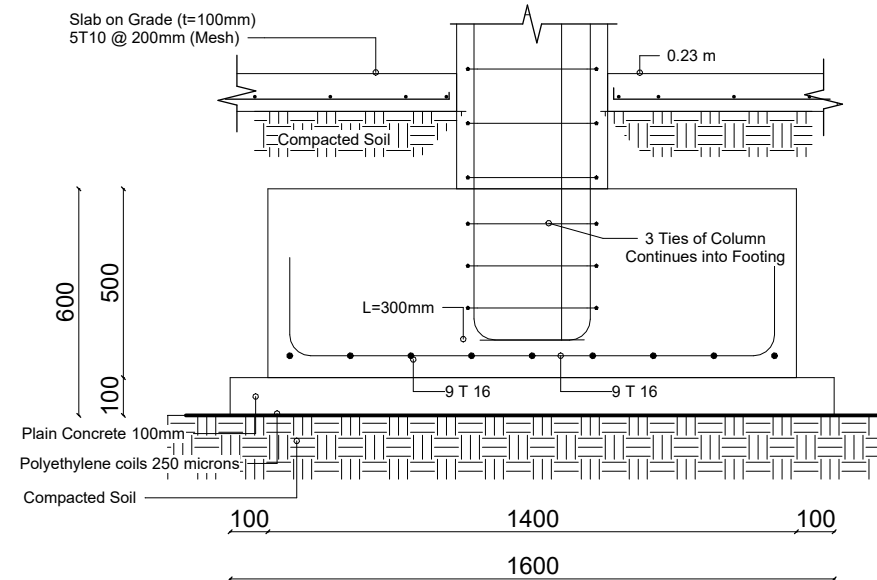
③ SEC F5-LONG  
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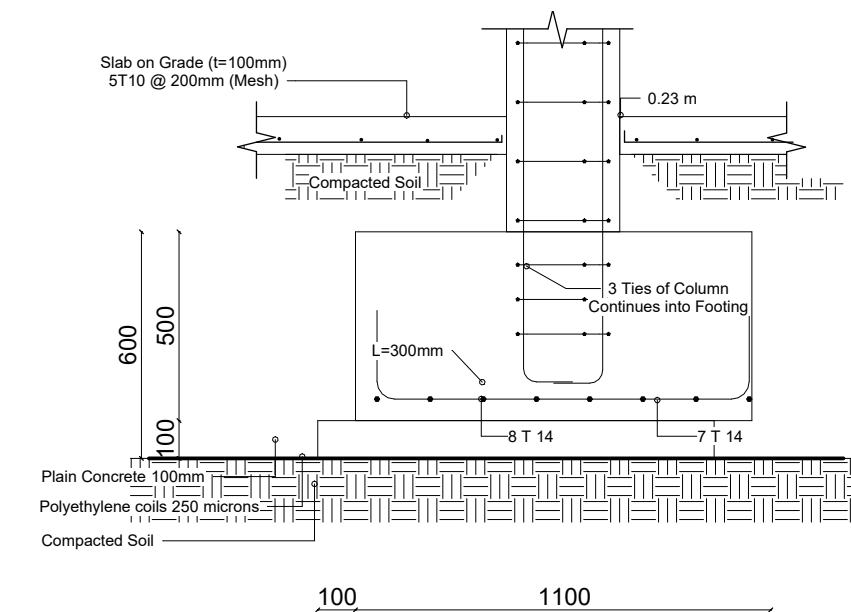
5 SEC F6-LONG  
1 : 10



② SEC F4-SHORT  
1 : 10

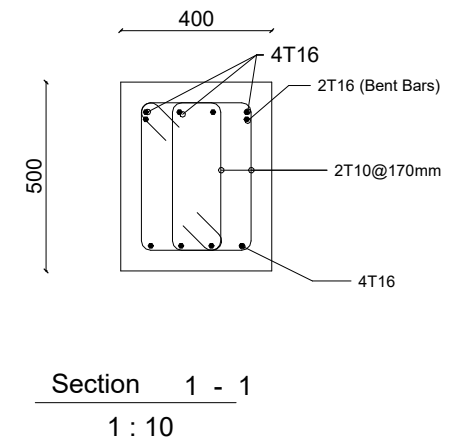
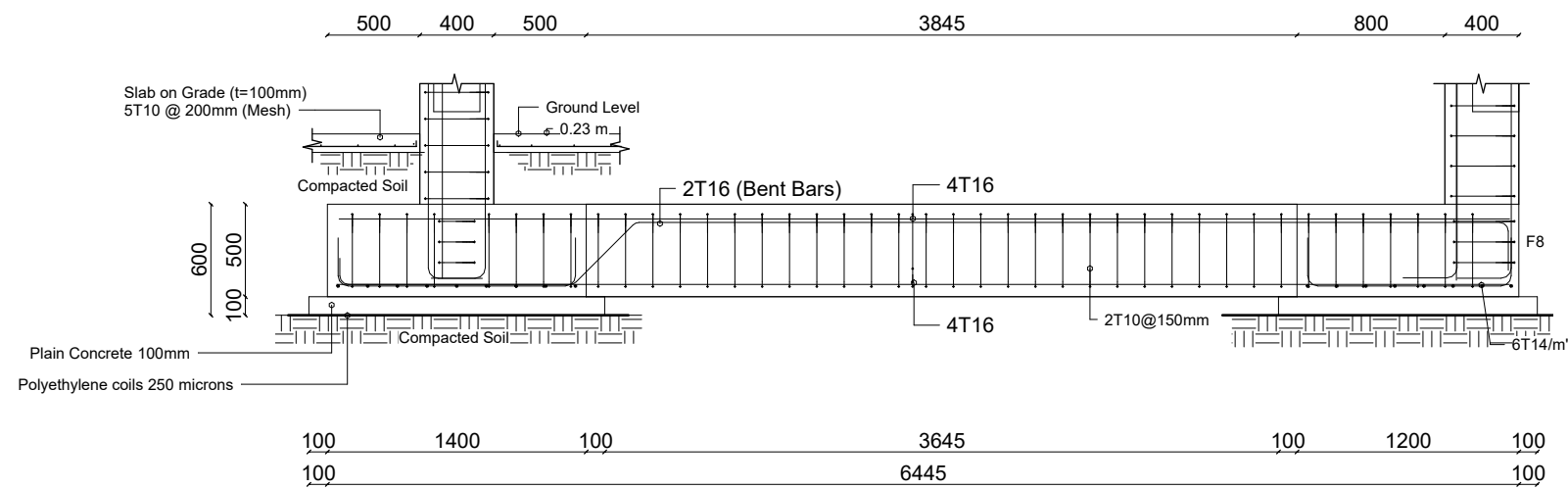


4 SEC F5-SHORT  
1 : 10



6 SEC F6 SHORT  
1 : 10

DRAWING NO.	S.07	Sheet Name:  <b>F4 &amp; F5 &amp; F6 Footings Detail</b>	Project Title:  <b>Construction of Administration Building and Warehouse at The Palestine Hospital - Sana'a</b>  إنشاء مبنى الإدارة والمستودع في مستشفى فلسطين - صنعاء	 <b>International Medical Corps</b> <b>IMC - Sana'a Office</b> منظمة الهيئة الطبية الدولية - مكتب صنعاء	Republic of Yemen MINISTRY OF PUBLIC HEALTH AND POPULATION HEALTH PLANNING AND DEVELOPMENT SECTOR GENERAL ADMINISTRATION OF ENGINEERING AFFAIRS 
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2 Tie Beam TB1 Section Detail  
1 : 20

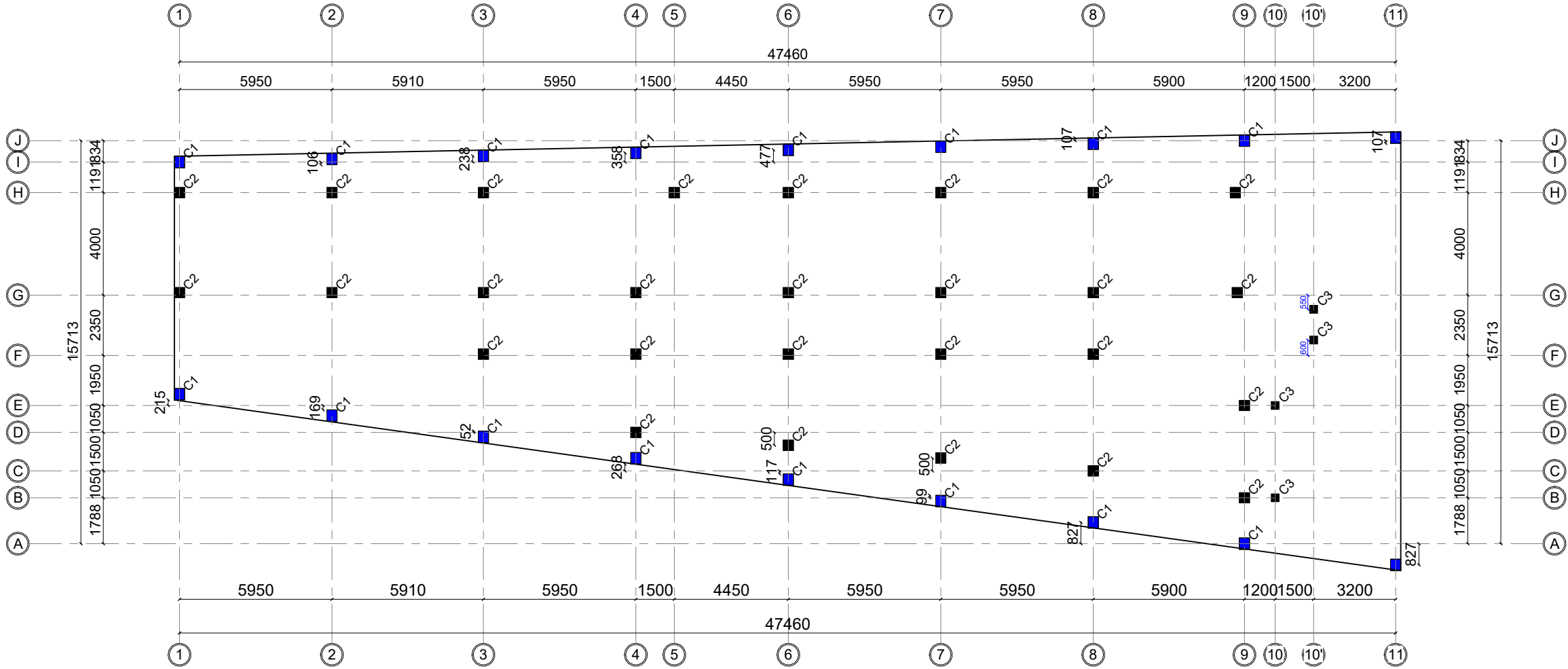
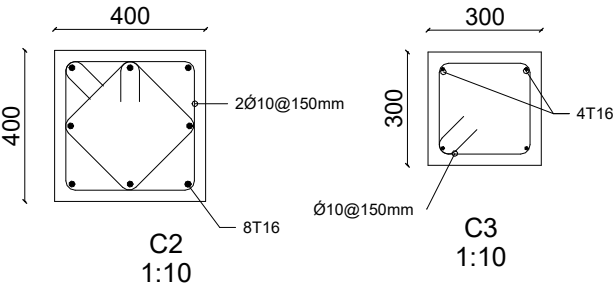
DRAWING NO.	S.08	Sheet Name:   
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Existing Column

New Column

Neck Columns and Ground Floor Concrete Columns Schedule						
CODE	Dimensions (mm)		Reinforcement			Number
	Width	Height	Main	Ties (mm)		
				End	Mid	
C1 (Existing)	400	450	10 T 14	2 Ø 10 @125	2 Ø 10 @150	
C2	400	400	8 T 16	2 Ø 10 @150	2 Ø 10 @170	
C3	300	300	4 T 16	1 Ø 10 @150	1 Ø 10 @150	

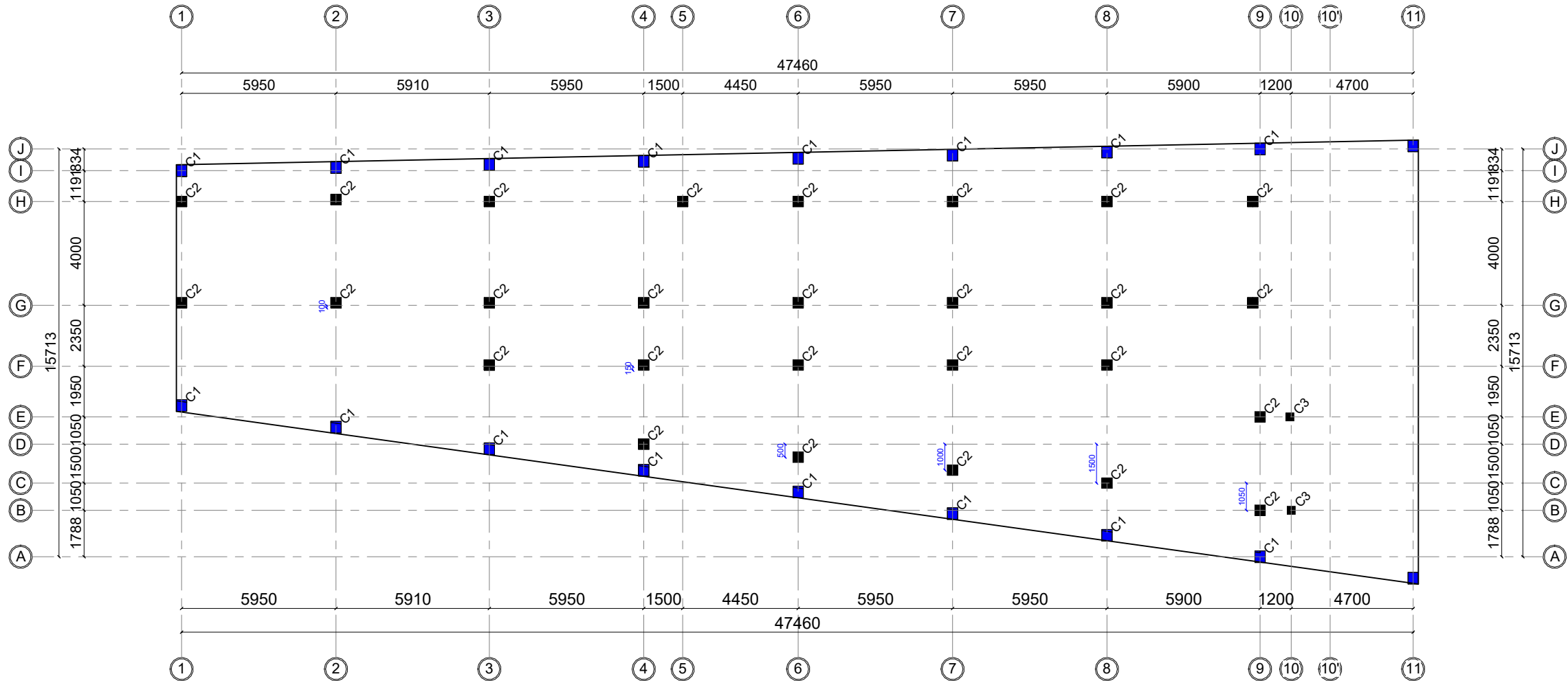


1 Neck Columns Plan  
1 : 100

Existing Column

New Column

Neck Columns and Ground Floor Concrete Columns Schedule						
CODE	Dimensions (mm)		Reinforcement			Number
	Width	Height	Main	Ties (mm)		
				End	Mid	
C1 (Existing)	400	450	10 T 14	2 Ø 10 @125	2 Ø 10 @150	
C2	400	400	8 T 16	2 Ø 10 @150	2 Ø 10 @170	
C3	300	300	4 T 16	1 Ø 10 @150	1 Ø 10 @150	

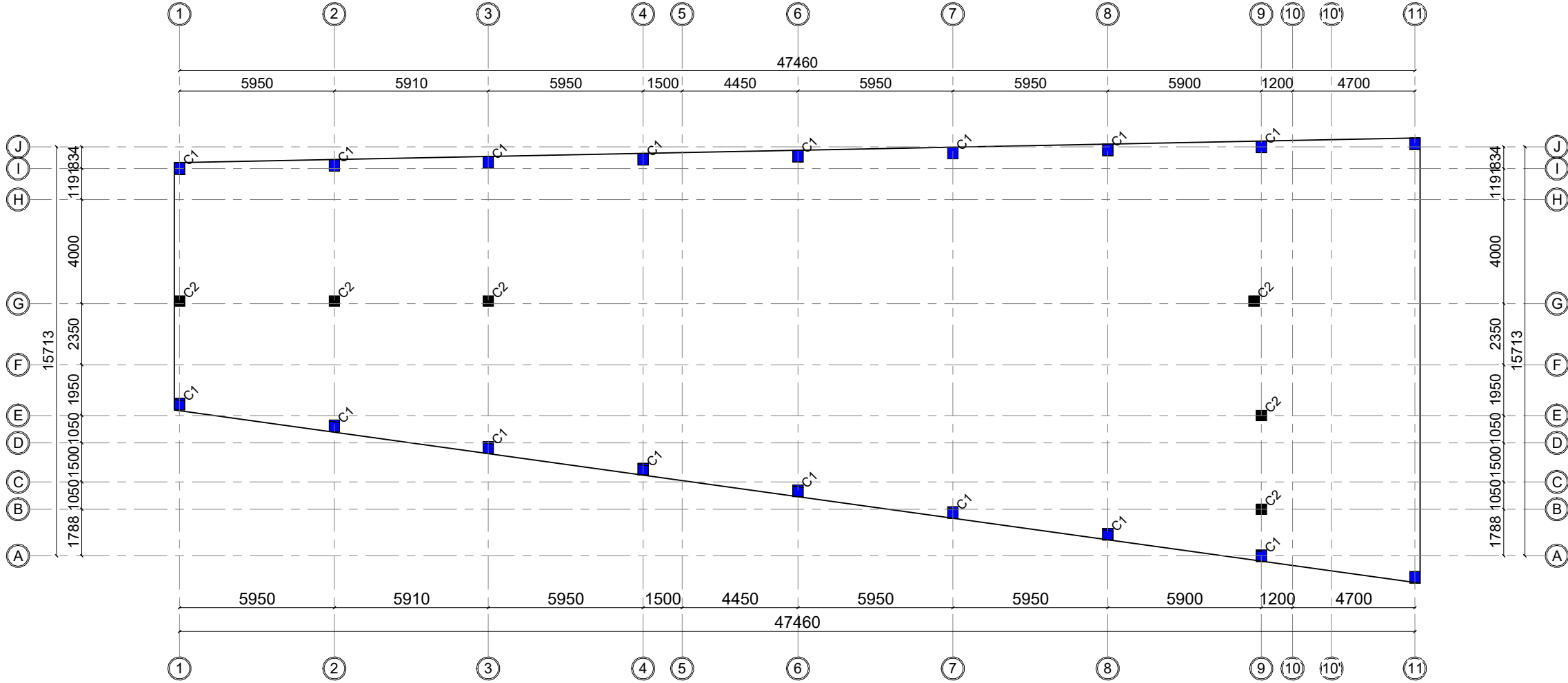


1 Ground Floor Columns Plan  
1 : 100

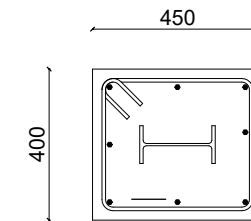
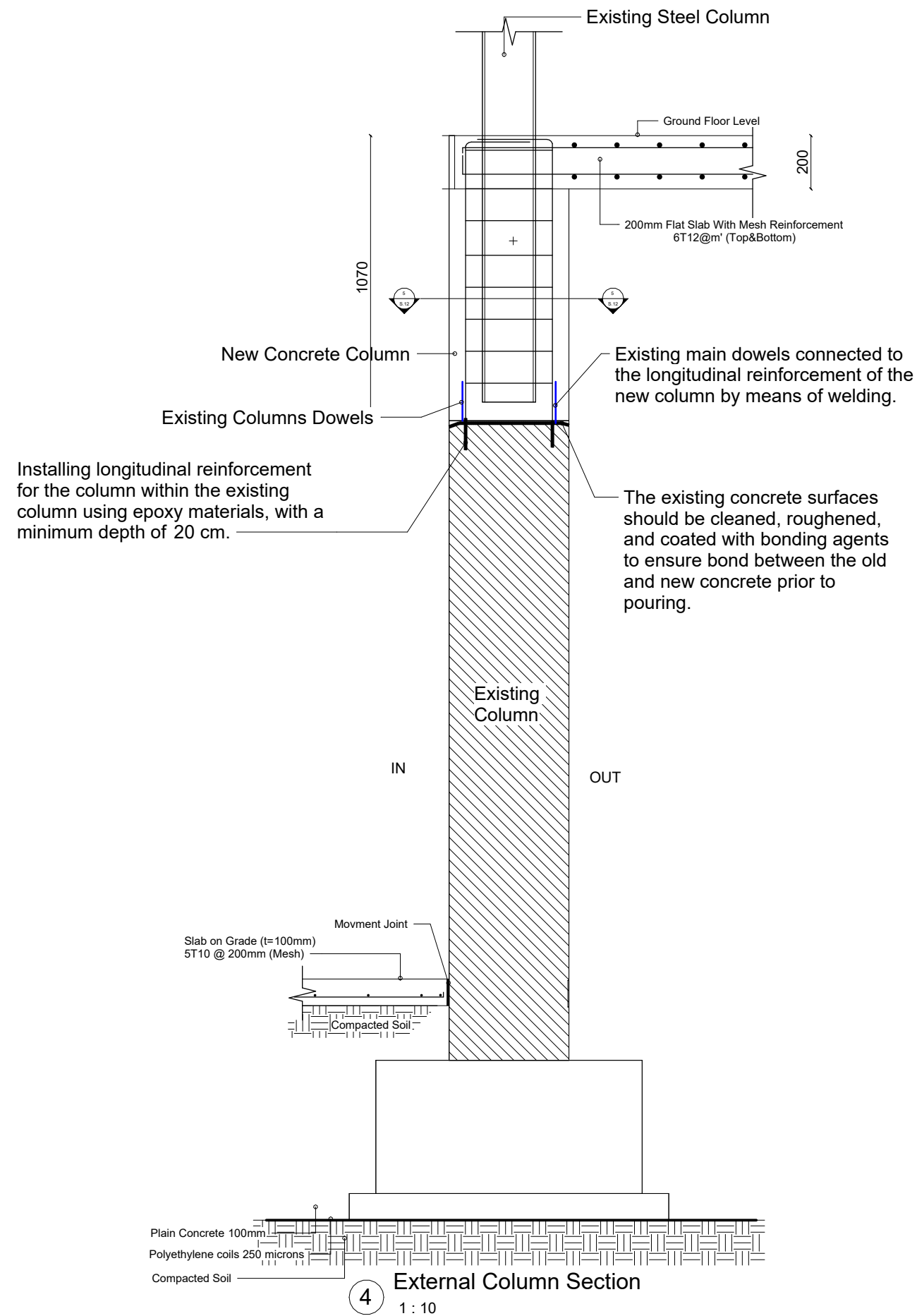
Existing Column

New Column

Neck Columns and Ground Floor Concrete Columns Schedule						
CODE	Dimensions (mm)		Reinforcement			Number
	Width	Height	Main	Ties (mm)		
				End	Mid	
C1 (Existing)	400	450	10 T 14	2 Ø 10 @125	2 Ø 10 @150	
C2	400	400	8 T 16	2 Ø 10 @150	2 Ø 10 @170	
C3	300	300	4 T 16	1 Ø 10 @150	1 Ø 10 @150	

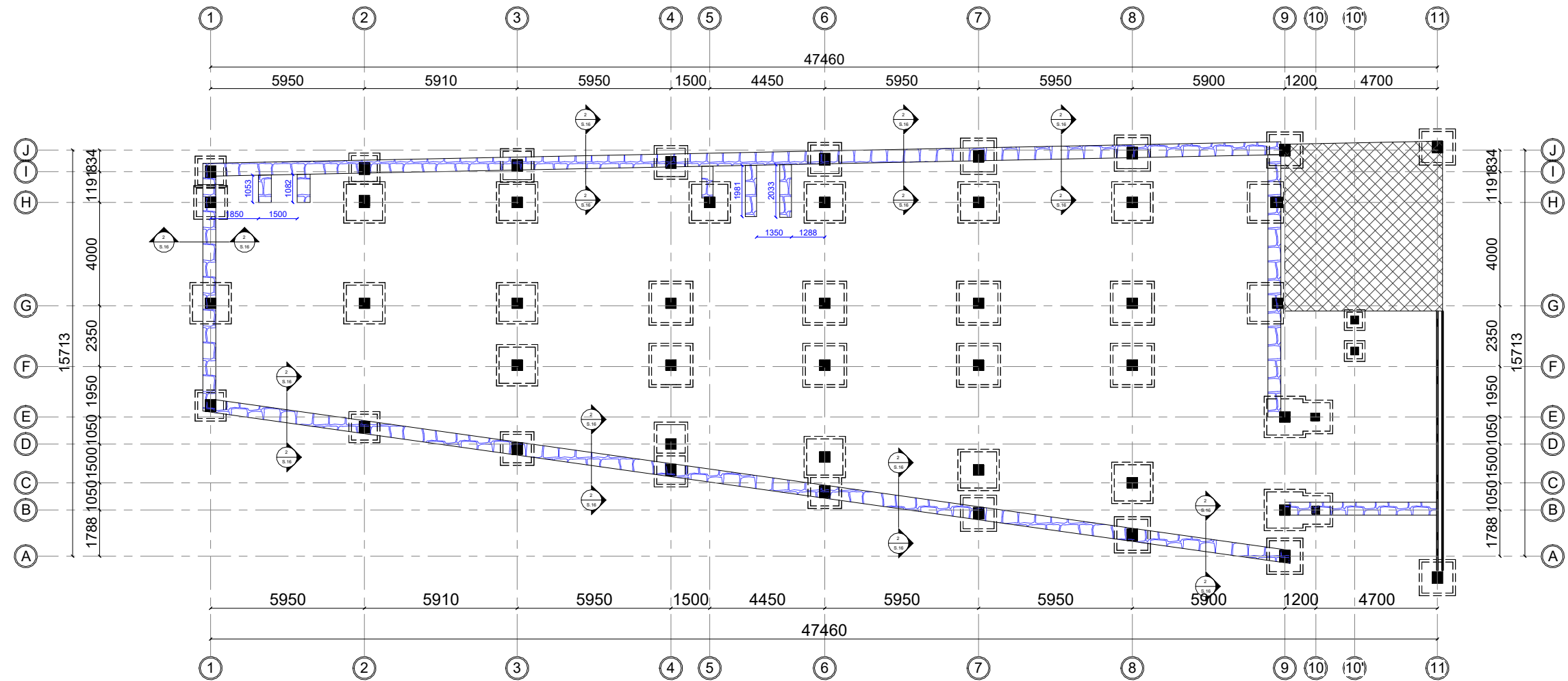
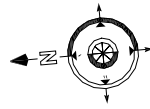


1 First Floor Columns Plan  
1 : 100



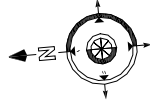
Section 5 - 5  
1 : 10

DRAWING NO.	S.12	Sheet Name:  External Existing Column Section Detail	Project Title:  Construction of Administration Building and Warehouse at The Palestine Hospital - Sana'a إنشاء مبنى الإدارة والمستودع في مستشفى فلسطين - صنعاء	 IMC - Sana'a Office منظمة الهيئة الطبية الدولية - مكتب صنعاء	 Republic of Yemen MINISTRY OF PUBLIC HEALTH AND POPULATION HEALTH PLANNING AND DEVELOPMENT SECTOR GENERAL ADMINISTRATION OF ENGINEERING AFFAIRS
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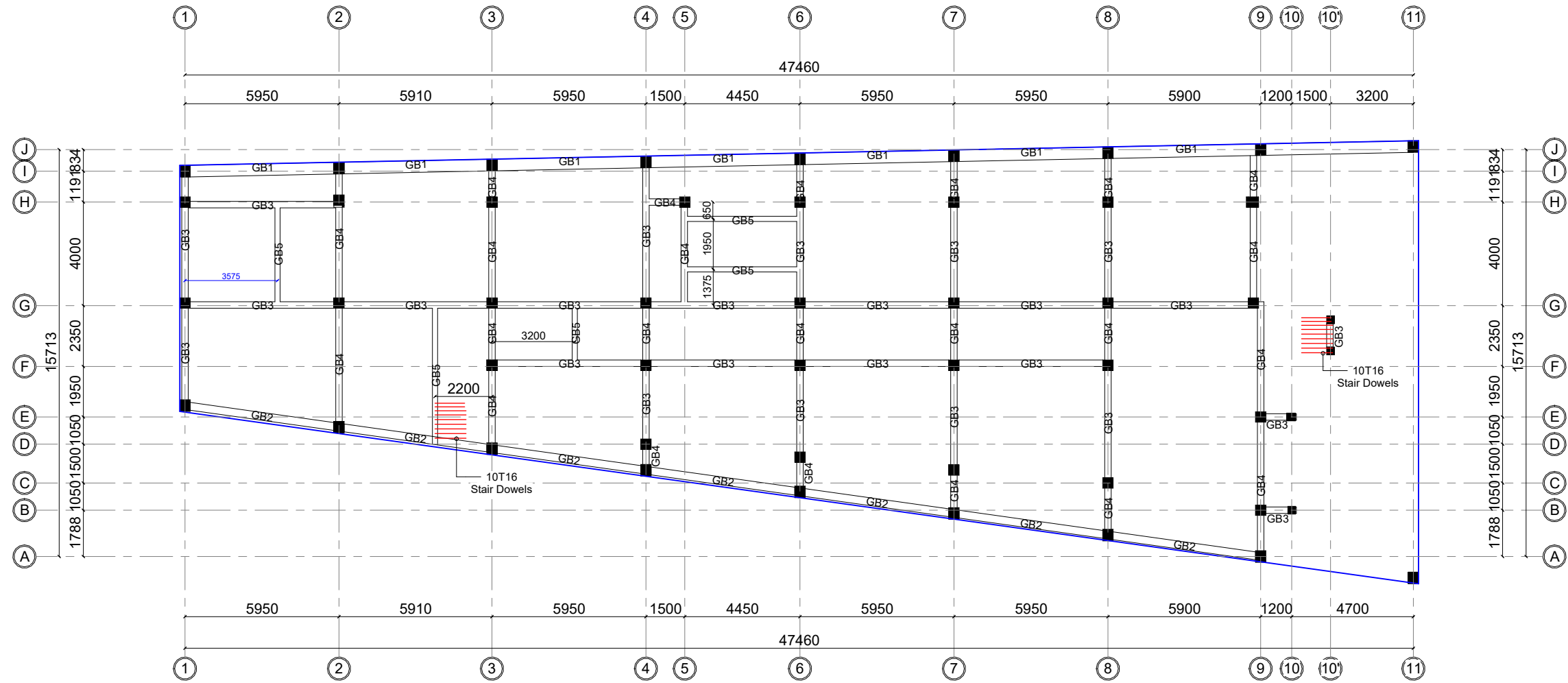


1 Retaining Stone Wall Plan  
1 : 100

DRAWING NO.	S.13	Sheet Name:  Chair Stone Building Plan	Project Title:  Construction of Administration Building and Warehouse at The Palestine Hospital - Sana'a إنشاء مبنى الإدارة والمستودع في مستشفى فلسطين - صنعاء	 IMC - Sana'a Office منظمة الهيئة الطبية الدولية - مكتب صنعاء	 Republic of Yemen MINISTRY OF PUBLIC HEALTH AND POPULATION HEALTH PLANNING AND DEVELOPMENT SECTOR GENERAL ADMINISTRATION OF ENGINEERING AFFAIRS
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DATE:	Apr. 2024				
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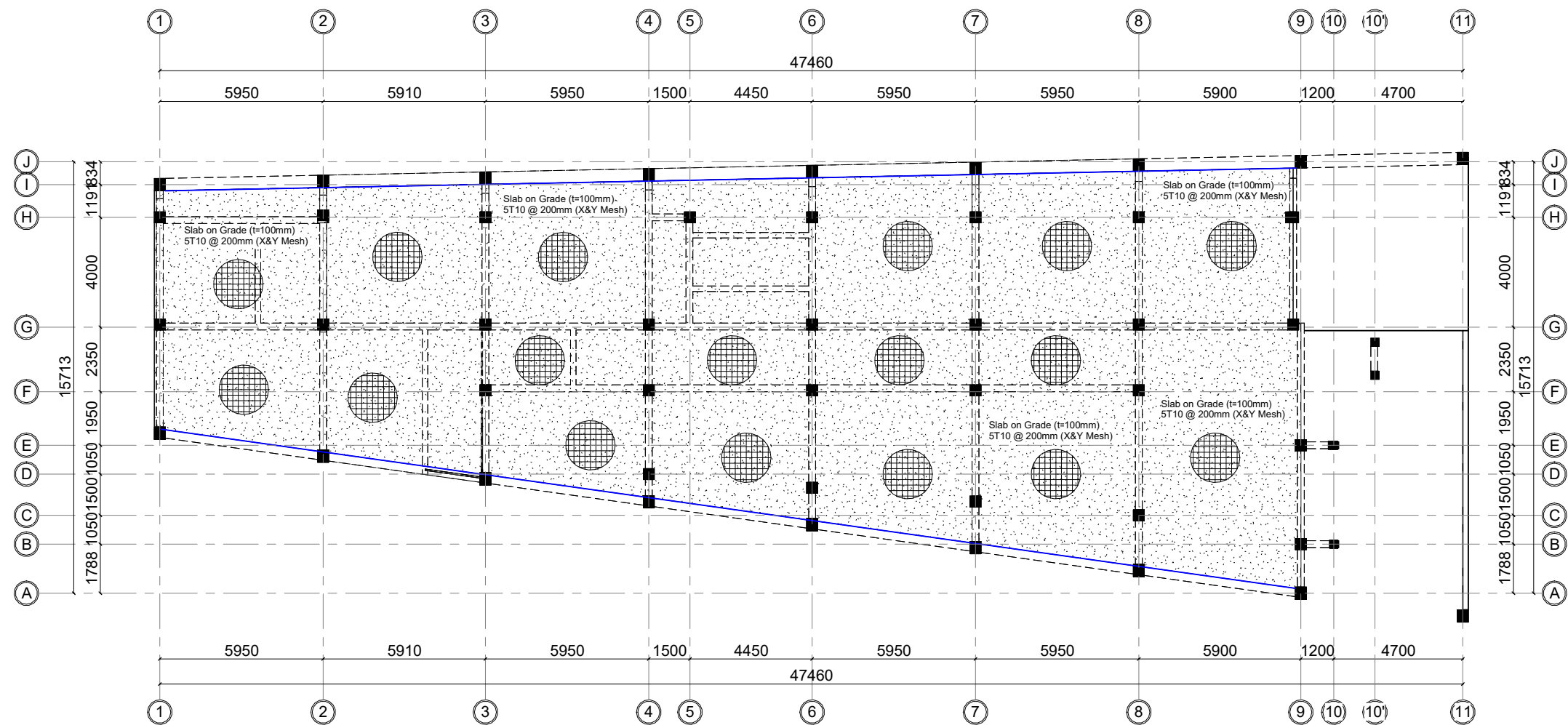
Schedule of Grade Beams							
CODE	Dimensions (mm)		Main Reinforcement				Stirrups (mm)
	Width	Height	Bottom	Add Bottom	Top	Add Top	
GB1(Existing)	400	600	3 T 16		3 T 16		2 Ø 10 @130
GB2(Existing)	300	300	3 T 16		3 T 16		2 Ø 10 @130
GB3	250	500	3 T 16	2 T 16	3 T 16	2 T 16	1 Ø 10 @130
GB4	250	500	3 T 16		3 T 16		1 Ø 10 @150
GB5	200	500	3 T 14		3 T 14		1 Ø 10 @150



1 Grade Beam Plan  
1 : 100

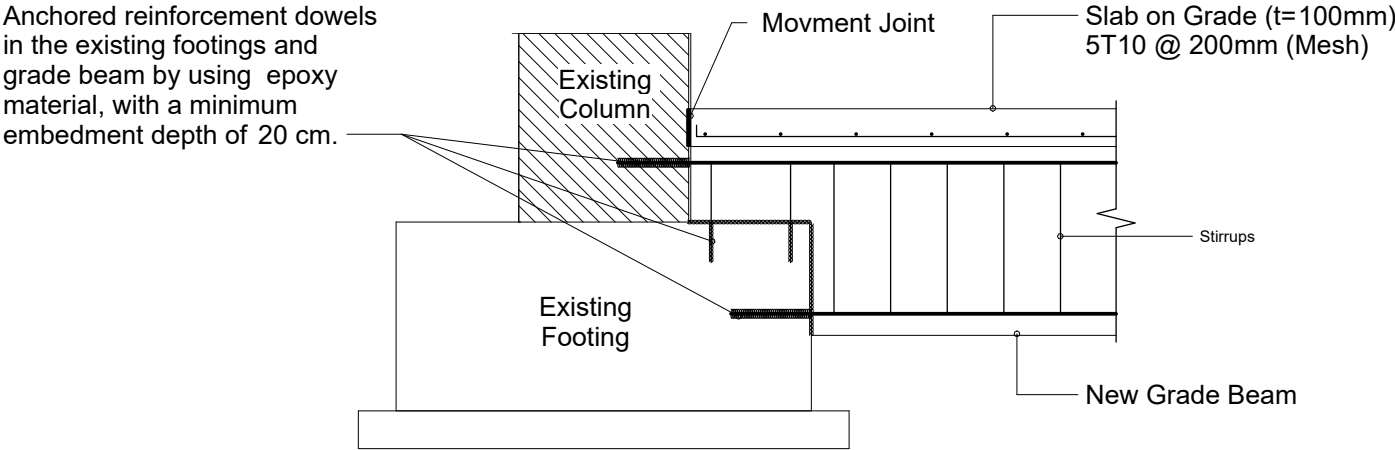
DRAWING NO.	S.14	Sheet Name:  Grade Beam Plan	Project Title:  Construction of Administration Building and Warehouse at The Palestine Hospital - Sana'a إنشاء مبنى الإدارة والمستودع في مستشفى فلسطين - صنعاء	 IMC - Sana'a Office منظمة الهيئة الطبية الدولية - مكتب صنعاء	 Republic of Yemen MINISTRY OF PUBLIC HEALTH AND POPULATION HEALTH PLANNING AND DEVELOPMENT SECTOR GENERAL ADMINISTRATION OF ENGINEERING AFFAIRS
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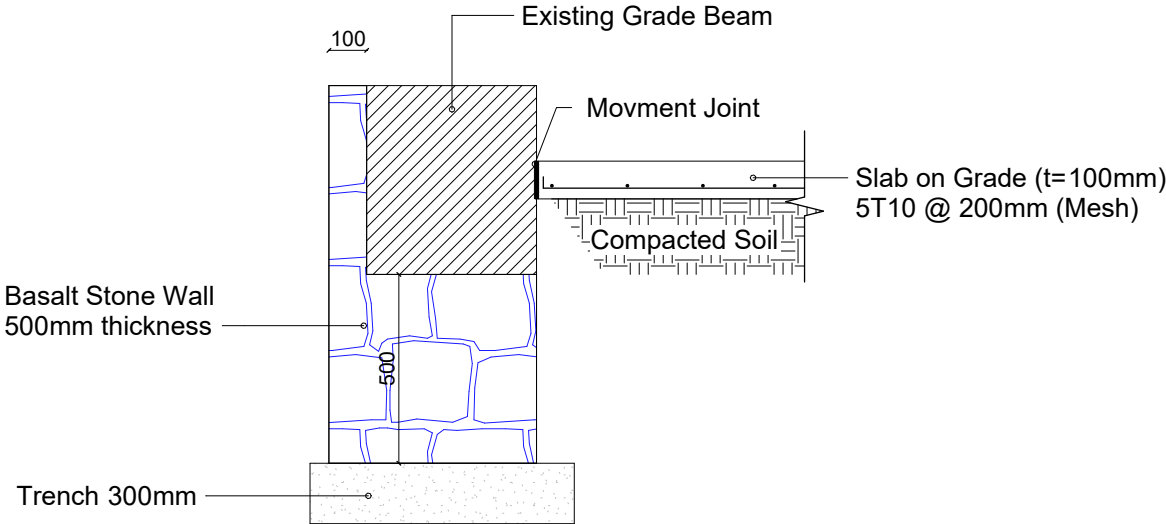
1 Slab on Grade Plan  
1 : 100

DRAWING NO.	S.15	Sheet Name:  
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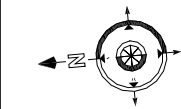
**Note:** The old concrete surface is roughened and cleaned from dust, and then it is coated with a bonding material before pouring the new concrete. This process aims to achieve a strong bond between the old and new concrete.





① Existing footing and New Grade beam Connection Detail  
1 : 10

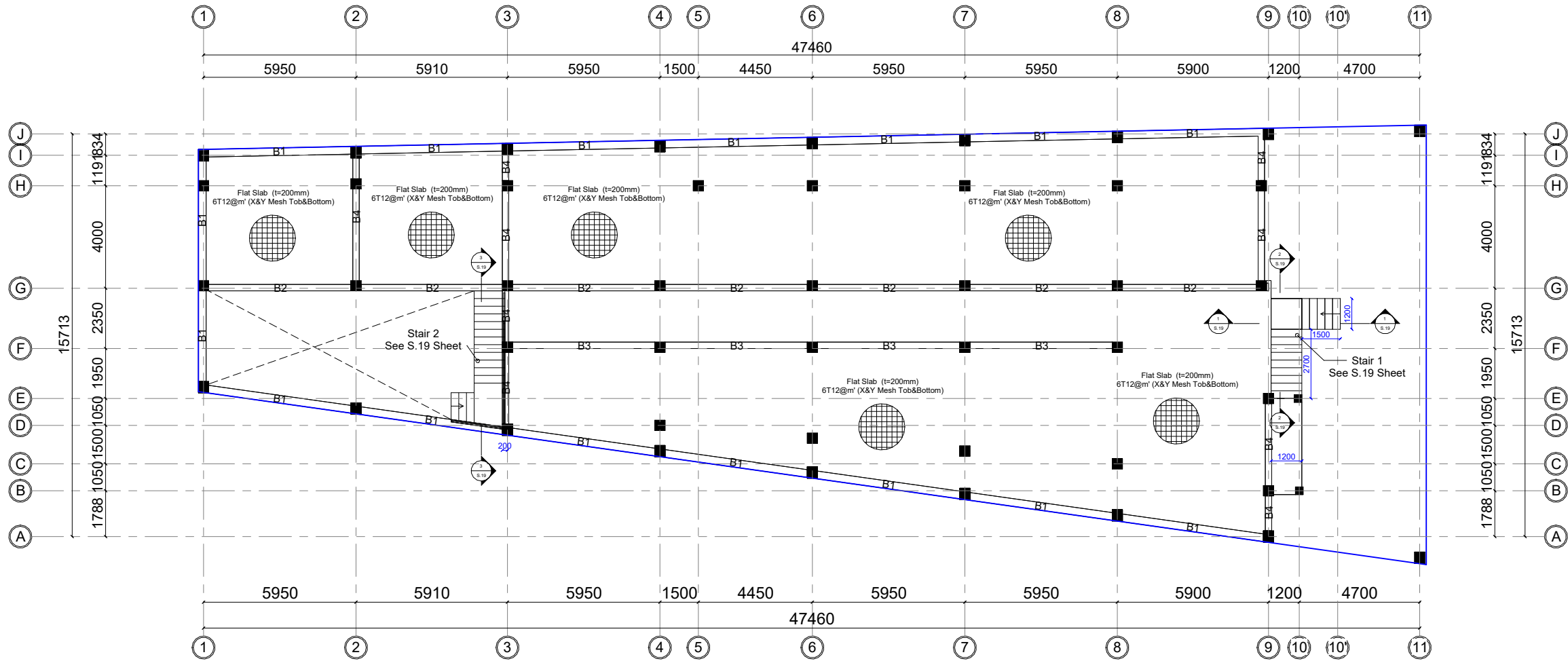


② Basalt Stone Under Grade Beam Detail  
1 : 10

DRAWING NO.	S.16	Sheet Name:  Grade Beam and Slab on Grade and Chair Stone Detail	Project Title:  Construction of Administration Building and Warehouse at The Palestine Hospital - Sana'a  إنشاء مبنى الإدارة والمستودع في مستشفى فلسطين - صنعاء	 <b>IMC - Sana'a Office</b> منظمة الهيئة الطبية الدولية - مكتب صنعاء	<div>Republic of Yemen</div> <div>MINISTRY OF PUBLIC HEALTH AND POPULATION HEALTH PLANNING AND DEVELOPMENT SECTOR GENERAL ADMINISTRATION OF ENGINEERING AFFAIRS</div> 
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DATE:	Apr. 2024				
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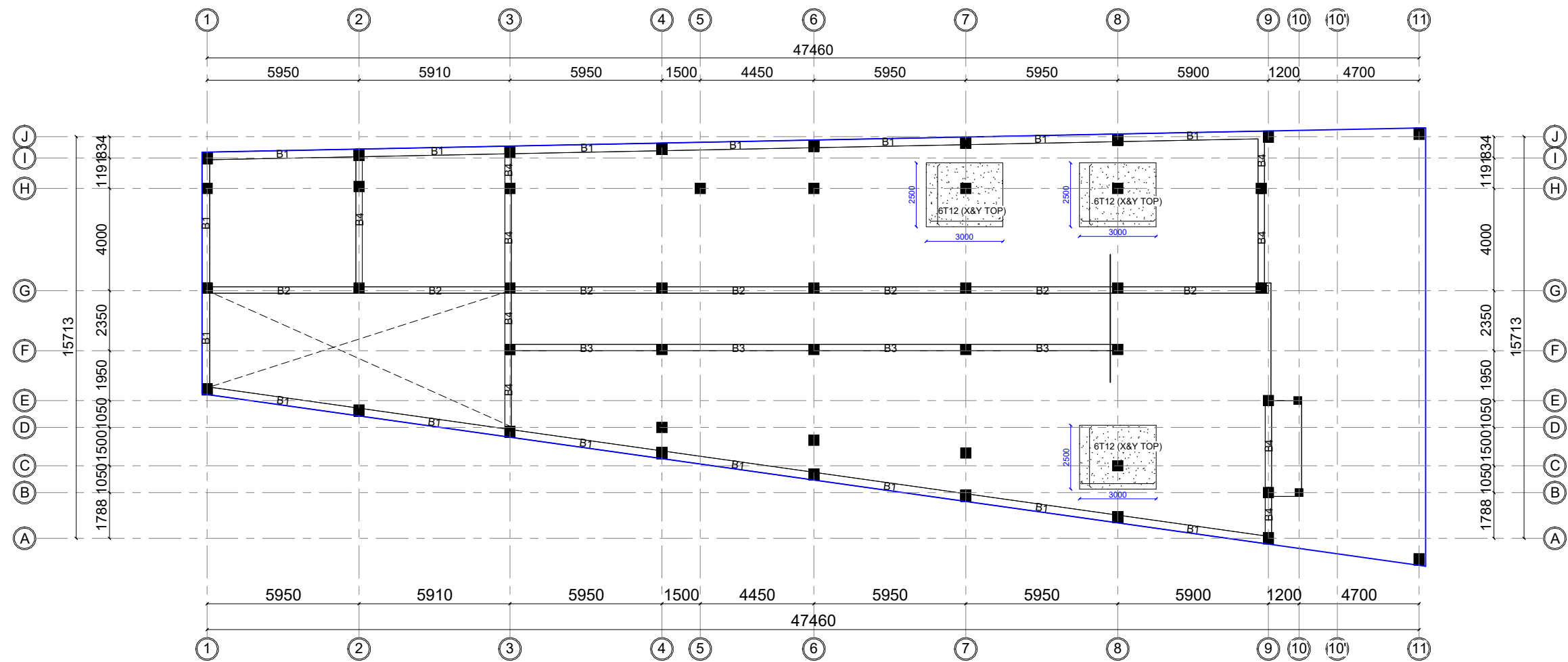


Schedule of Beams									
CODE	Dimensions(mm)		Reinforcement		Additional Reinforcement	Stirrups			
	Width	Height	Bottom Straight	Top Straight		At End (mm)	At Mid (mm)		
B1	300	500	3 T 18	3 T 18		1 Ø 10 @100	1 Ø 10 @150		
B2	250	500	3 T 18	3 T 18		1 Ø 10 @100	1 Ø 10 @150		
B3	250	500	3 T 18	3 T 18		1 Ø 10 @100	1 Ø 10 @150		
B4	250	500	3 T 16	3 T 16		1 Ø 10 @120	1 Ø 10 @150		



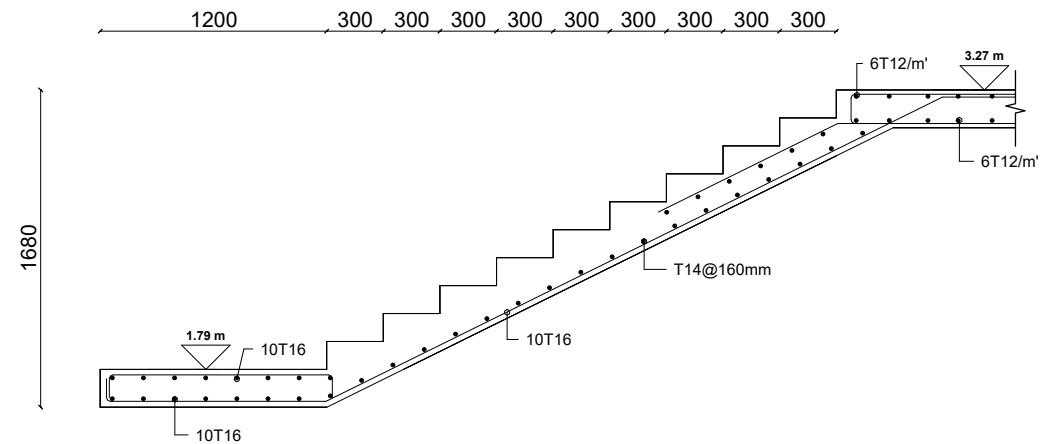
1 Ground Floor Slab  
1 : 100

DRAWING NO.	S.17	Sheet Name:  First Floor Structural Plan	Project Title:  Construction of Administration Building and Warehouse at The Palestine Hospital - Sana'a إنشاء مبنى الإدارة والمستودع في مستشفى فلسطين - صنعاء	 IMC - Sana'a Office منظمة الهيئة الطبية الدولية - مكتب صنعاء	 Republic of Yemen MINISTRY OF PUBLIC HEALTH AND POPULATION HEALTH PLANNING AND DEVELOPMENT SECTOR GENERAL ADMINISTRATION OF ENGINEERING AFFAIRS
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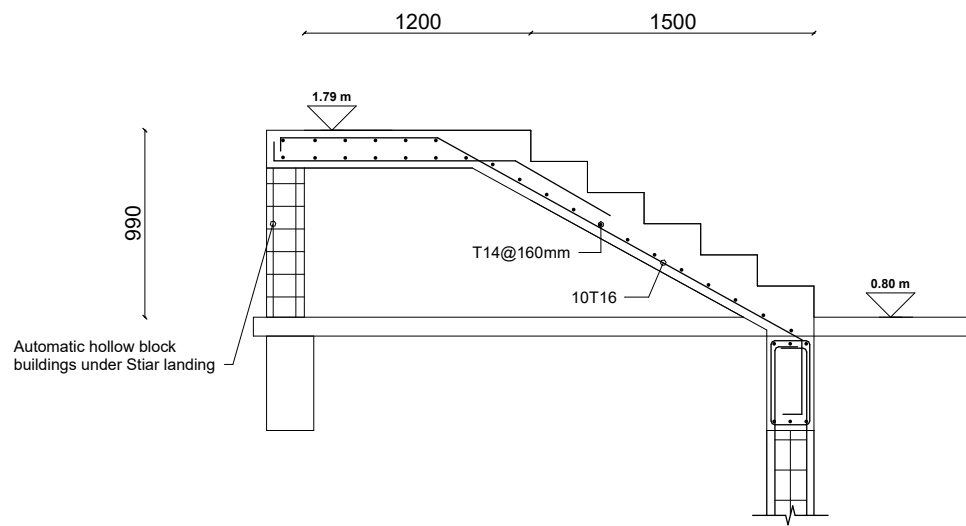


1 Additional Top Reinforcement  
1 : 100

DRAWING NO.	S.18	Sheet Name:  Additional Top Reinforcement	Project Title:  Construction of Administration Building and Warehouse at The Palestine Hospital - Sana'a إنشاء مبنى الإدارة والمستودع في مستشفى فلسطين - صنعاء	 IMC - Sana'a Office منظمة الهيئة الطبية الدولية - مكتب صنعاء	 Republic of Yemen MINISTRY OF PUBLIC HEALTH AND POPULATION HEALTH PLANNING AND DEVELOPMENT SECTOR GENERAL ADMINISTRATION OF ENGINEERING AFFAIRS
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DATE:	Mar/2024				
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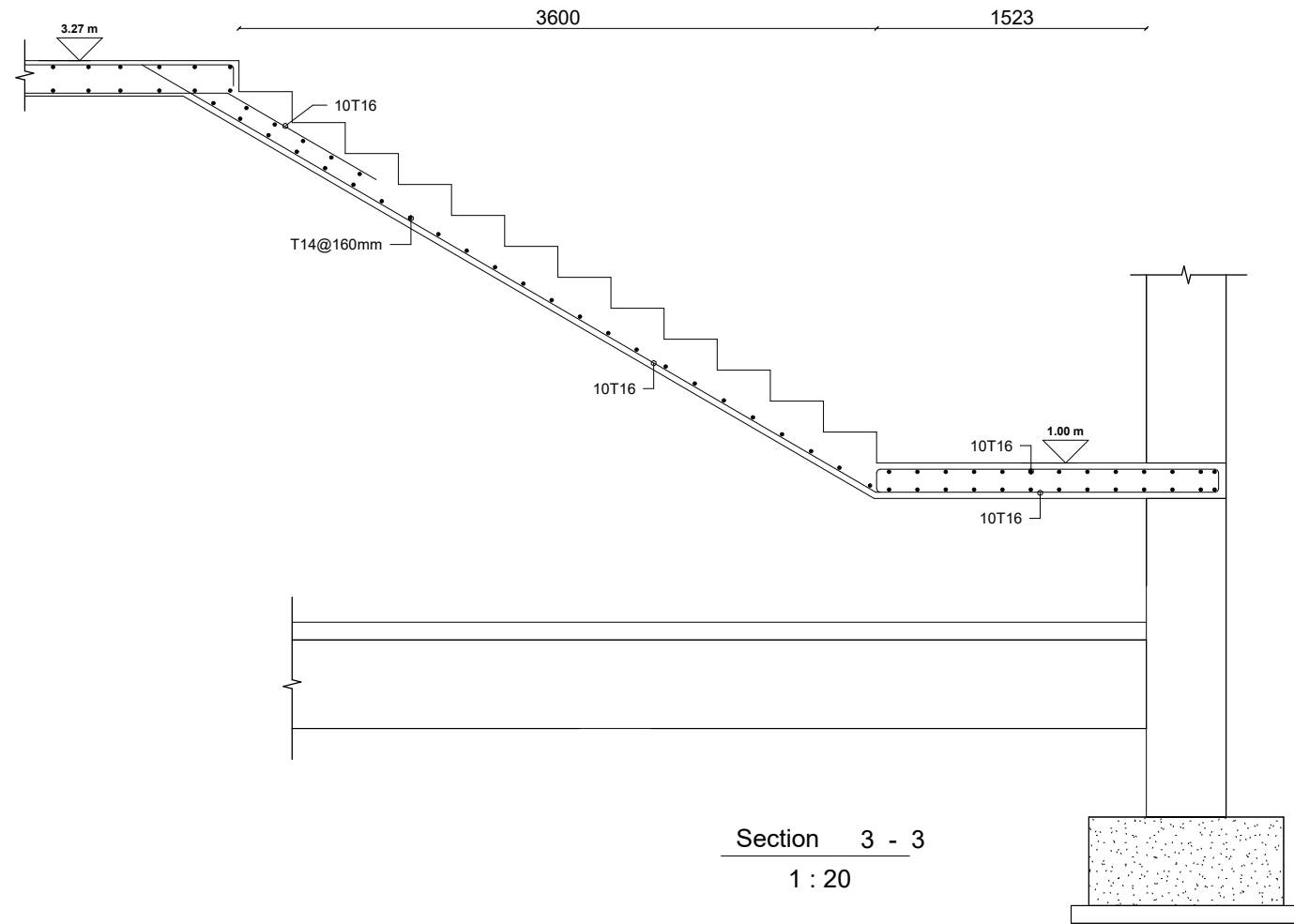


Section 2 - 2  
1 : 20

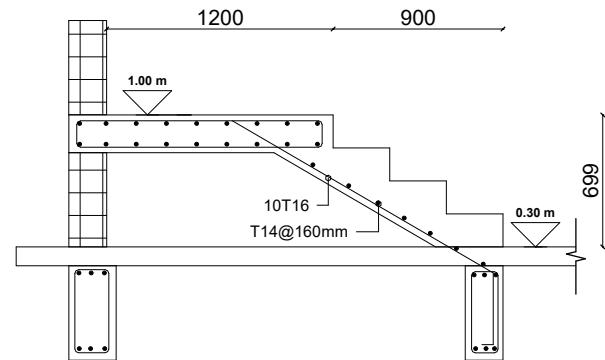


Section 1 - 1  
1 : 20

Stair -1 Section Detail  
Main Entrance Building



Section 3 - 3  
1 : 20



Section 4 - 4  
1 : 20

Stair -2 Section Detail  
Warehouse

DRAWING NO.	S.19	Sheet Name:  Stair Section Detail	Project Title:  Construction of Administration Building and Warehouse at The Palestine Hospital - Sana'a إنشاء مبنى الإدارة والمستودع في مستشفى فلسطين - صنعاء	 IMC - Sana'a Office منظمة الهيئة الطبية الدولية - مكتب صنعاء	 Republic of Yemen MINISTRY OF PUBLIC HEALTH AND POPULATION HEALTH PLANNING AND DEVELOPMENT SECTOR GENERAL ADMINISTRATION OF ENGINEERING AFFAIRS
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